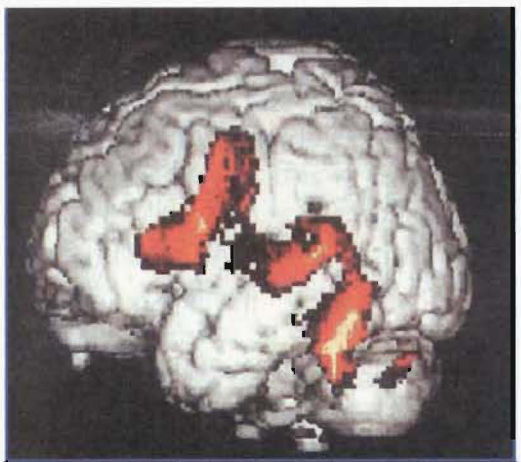
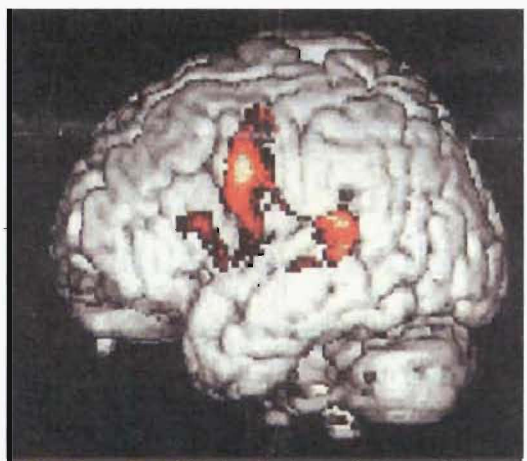


Normal brain during reading is active in areas linking vision to sound and meaning

"We can lift ourselves out of ignorance,
we can find ourselves as creatures of excellence and intelligence and skill.
We can be free!"

Jonathon Livingston Seagull; a story
Richard Bach, 1970.



Reading disability brain shows little activity in areas linking language to visual cues

Adapted from *Time*, March 26th, 2001.

And my teacher inquired,
"What is it you find so hard about reading?"
"The words," I replied.

Matthew, aged thirteen, 1998.

STUDENT 'BELIEF EFFECTS'

IN

REMEDIAL READING

A thesis submitted in fulfilment of
the requirements for the Degree of
Doctor of Philosophy in Education

Judy A. Kirk

University of Canterbury

2001

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ABSTRACT

This study investigated the word recognition difficulties, the strategies used for word recognition and the self-beliefs about their ability to read and their reading behaviours, of six severely reading disabled Year Nine and Year Ten adolescents in a New Zealand coeducational, secondary school. Each student was given a year long, individualised, one-on-one reading programme, which taught phonological processing skills, letter-sound knowledge and the strategies to apply and monitor the application of their letter-sound knowledge. The programme also encouraged the students to adopt or maintain very positive self-beliefs about their ability to decipher words and the effectiveness of applying the strategies they were being taught consistently, persistently and with the flexibility to change if their initial attempts were unsuccessful.

Reading disabled adolescents who experience continual failure are said to come to believe that they do not have the ability to succeed; do not have control over their progress. As a result they do not believe that with effort they can achieve. They become passive learners with a range of avoidance behaviours. They become learned helpless. As a consequence they fail to generalise the skills, knowledge and strategies they possess to new tasks.

When they entered the programme the participating students had difficulty deciphering most words of two or more syllables. They used incomplete and inaccurate letter information both in their attempts to decipher unfamiliar words and when deciphering one and two syllable, high frequency words that they had read correctly on previous occasions. In addition each had difficulty integrating contextual meaning with letter information as they read.

The study has shown that each student had their own particular pattern of beliefs about their ability to read and the reading strategies they used. Some students held a mastery pattern of beliefs. They made accelerated progress of up to three age equivalent years in word recognition in the year. They were very optimistic about their ability to read and would tackle text that was, for them, very difficult to decipher. They were consistent and persistent in applying the strategies. Those students who made the most progress learned to be flexible and change their strategy use if they were initially unsuccessful.

The students who held maladaptive patterns of beliefs made progress of only one age equivalent year or less. The learned helpless students increased their beliefs in the effectiveness of the programme teaching as the year progressed. But they formed and changed their beliefs about their ability to

decipher as a result of their classroom experiences. When they changed their beliefs about their ability, they changed their reading behaviours in terms of the programme teaching, because they believed in its effectiveness. They became more consistent and persistent in their use of the strategies they were being taught. One student with a maladaptive pattern of beliefs was not learned helpless but instead held too high a belief in the effectiveness of his reading strategies. This led to a dysfunctional pattern of repeatedly reapplying them.

The study concluded, first, that the severe reading problems the participating students had resulted from their difficulties with using accurate and complete letter-sound information and their difficulties with integrating this information with the use of contextual meaning to decipher words. These students were capable of using strategies successfully. Whether each student's achievement gains were accelerated or more limited depended on their reading self-beliefs about their ability and their strategy use.

Second, the study concluded that it is effective to teach a comprehensive programme for word recognition which includes teaching letter-sound information and the strategies to apply this letter-sound knowledge and encourages the students to hold positive self-beliefs about their ability to decipher words and their strategy use. It is important that such a programme is run for sufficient time to allow changes in ability beliefs and beliefs about strategy use, time for these changes in beliefs to result in changes in strategy use and time for the changes in strategy use to result in changes in rates of achievement. It is suggested that good liaison between the classroom teacher and the remedial teacher, encouraging students to believe they had control over their learning and using stimulating reading material can be used to hasten changes in ability beliefs and motivation to read.

INTRODUCTION

For many years the plight of children with average or above abilities who fail to make progress with reading and spelling has attracted the attention of teachers and researchers. Such reading disabled students are marginalised throughout their school years through exclusion from language and the curriculum (Stanovich, 1986). In New Zealand, without appropriate help, they are relegated to secondary school special needs classes. They leave school with few literacy skills and are therefore unable to achieve full independence as adults; unable to perform everyday tasks such as writing a cheque, filling in a form and reading street names or a menu at a restaurant. They face a probable future of either very low paid menial work or unemployment and welfare with all the social deficits associated with these low status socioeconomic groups.

The likelihood of marginalisation from the school curriculum and the full range of usual adult activities is further increased for reading disabled students because they have a greater chance of succumbing to such non-academic outcomes as emotional maladjustment, family functioning, adolescent problems of school dropout and substance abuse, adult maladaptation, stress (Morrison & Cosden, 1997), depression and suicide (Bender, Rosenkrans, & Crane, 1999). A longitudinal study carried out by the University of Otago Medical School found that severe reading disability was frequently associated with juvenile delinquency (Williams & McGee, 1994). On a more positive note, research studies have shown that including basic skills such as reading in their treatment programmes has significantly decreased recidivism for older, adolescent, youth who had received court sentences, but who were not chronically antisocial (Brier, 1994).

On a national level the New Zealand economy has changed over the last twenty years. Where it used to be dependent on employment for 'mass production' it is now seen to be becoming more focussed on 'niche markets' with a dependence on high skill levels and a heavy reliance on new technology of various types; the 'knowledge society'. (The New Zealand Government, 2001).

The literacy and general skill levels of the workforce are regarded as significant factors in determining New Zealand's overall economic capacity. Expectations are continually rising. In a rapidly changing world, adults are now required to constantly improve their knowledge and skills. Literacy levels in this context are not considered in the context of word recognition for literacy but at the higher level of being able to access, understand and use a wide range of information including information available through technology (Johnson, 2000).

The New Zealand Government is concerned that, in this knowledge-driven environment, groups of New Zealanders do not become excluded from the wealth generated in the labour market (New Zealand Government, 2001). In an effort to reduce such marginalisation they have introduced the Literacy and Numeracy Strategy for the pre-school to secondary school years and the Adult Literacy Strategy (Minister of Education, 2001). In this economic climate the development of effective programmes for teaching the reading disabled both word recognition and literacy in the fuller sense assumes even greater urgency.

Research during the last 20 years has shown that difficulties with phonological processing including the ability to hear, to isolate and to change the phonemes in words are associated with poor progress in reading. These difficulties prevent children from learning the alphabetic principle; the letter-sound knowledge necessary for good progress in deciphering words (Bradley & Bryant, 1983; Gillon & Dodd, 1997; National Reading Panel, 2000; Stanovich, 1986). Such children can experience severe and persistent failure in word recognition.

As a result of their initial and persistent failure severely reading disabled children develop motivational problems. They are less likely to persist in their efforts to read words. Both as a result of their reading difficulties and as a result of their reduced motivation the amount of text they read is severely reduced when compared to that of normally developing readers (Stanovich, 1986; 1988). Their reading achievement is further reduced by their lack of reading experience. Their inability to read results in their exclusion from the school curriculum. They fail to achieve their potential in language achievement. Their learning is restricted.

The reading disabled child's experience with word recognition differs from that of a child with normally developing reading skills and strategies. Their differing experience with word recognition prevents reading disabled students from acquiring the comprehensive metacognitive knowledge about the strategies they use and the effective metacognitive monitoring strategies about their reading behaviours that normally achieving readers develop. As a result of this lack of knowledge about strategies for reading unfamiliar words and lack of monitoring to establish the effectiveness of each strategy being applied, the cognitive strategies reading disabled students use for word recognition and reading comprehension are less comprehensive and less effective than those of a normally developing reader (Stanovich, 1986, 1988; Wong, 1991).

Applying effective and appropriate cognitive and metacognitive strategies provides a student with the means to successfully complete a task. Affective responses such as pride are the consequence of experiencing continuing successes in completing tasks. They provide continuing motivation for

the use of effort in applying strategies during problem solving. Successful students believe they have the ability to complete a task and that the effort they expend contributes to their success (Borkowski, Carr, Rellinger, & Pressley, 1990).

Students who experience continual failure come to believe they do not have sufficient ability to successfully complete tasks. As a result, they perceive that they do not have control over their learning. They become learned helpless, passive learners often with a range of avoidance behaviours. Their consequent lack of experience in reading and lack of effort when deciphering difficult words further limits their development of a full range of appropriate and effective cognitive and metacognitive strategies. The negative affective responses such as shame that they experience as a consequence of their continual failure reinforce their learned helpless behaviours (Borkowski et al., 1990).

Students can be taught effective strategies for problem solving in areas of difficulty. However, if strategies are not learned and practised in the context in which they are to be used then they may not be used spontaneously by students (Resnick, 1989). It is therefore necessary that the students be taught to apply their cognitive and metacognitive strategies to read unfamiliar words both in isolation and in full text.

These research findings suggest that an effective remedial reading programme will include four aspects. First, the teaching of the missing phonological processing skills and the letter-sound knowledge base. Second, the teaching of the cognitive and metacognitive strategies to enable the student to effectively apply their developing skills and knowledge base. Third, remedial instruction should be given to correct any inappropriate self-beliefs they hold about their ability or about expending effort to apply the strategies. Finally, the students should be taught to use their new skills, knowledge and strategies to decipher unfamiliar words in isolation and in full text.

This study researched the effectiveness of a reading programme that was designed to be used with adolescents whose word recognition was extremely poor, but whose listening comprehension ability indicated that reading comprehension was not a contributing factor in their lack word recognition achievement. The six Year Nine and Year Ten participants attended a local coeducational secondary school. The study investigated:

- The students' word recognition abilities, phonological processing abilities, language abilities, strategy use and academic self-beliefs about reading when they entered the reading programme;

- The effects of the interactions between the students' academic self-beliefs about reading and their strategies for applying and monitoring their letter-sound knowledge on their achievement in word recognition; and

- The changes in the students reading behaviours and self-beliefs as a result of the reading programme.

In this thesis, Chapter 1 first discusses the literature relating to the relationships between cognition, metacognition, reading self-beliefs and achievement from cognitive-motivational theory, self-efficacy from social-cognitive theory, intrinsic and extrinsic motivation and finally the implications of these for the reading disabled. Second, it reviews literature on the effectiveness of remedial reading programmes based on the teaching of phonological awareness, letter-sound knowledge and strategies for word recognition. Chapter 2 and Chapter 3 present the teaching and assessment programmes used in this study. Chapters 4 to 9 present the case studies for each of the six participants. These include achievement in word recognition, assessment and a miscue analysis for strategy use, self-rating results for reading self-beliefs and self-efficacy and a discussion of the self-belief, cognitive-metacognitive strategy use, achievement interplay. In Chapter 10 the general characteristics of the reading behaviours of the six participants are described and the implications of the self-belief, cognition, metacognition and reading achievement interplay are discussed. In addition, consideration is given to the importance of task value and intrinsic-extrinsic motivation. Finally the influences that changed the student's self-beliefs are discussed. Chapter 11 presents the conclusions and a hypothetical explanation for the observed characteristics of reading disability described in this thesis. It concludes with suggestions for further research.

CHAPTER 1

Remediating Severe Reading Disability
A Literature Review

To develop a remedial reading programme teaching cognitive strategies to apply letter-sound knowledge to unfamiliar words, the metacognitive strategies necessary to monitor that these strategies are appropriate and effective and positive reading self-beliefs, an understanding of these three concepts is necessary.

First, this literature review presents the conceptual basis of cognitive and metacognitive strategies and the interrelationships between students' reading self-beliefs and their strategy use. Second, the review centres on the effectiveness of remedial reading programmes based on whole word recognition, letter-sound associations, phonological processing and strategies for word recognition, particularly in terms of the generalisation of the teaching to untaught material.

Further literature relating to the teaching and assessment methods used in this study is presented in the Reading and Assessment Methods chapters. Other literature is discussed as it becomes relevant to the thesis.

Relationships Between Self-Concept, Cognition, Metacognition, and Achievement

Metacognition

Research in memory process skills led to an understanding that process skills involved two levels. The first was a cognitive level, which involved the thinking necessary to carry out a task. The second was a 'metacognitive' level where 'meta' meant 'knowing about knowing' or 'thinking about thinking'. It involved knowledge about the cognition necessary to carry out the task (Flavell, 1971, 1976)

Baker and Brown (1984) recognised that the concept of metacognition, "the knowledge and control the child has over his or her own thinking and learning activities" was "somewhat fuzzy" (p. 353). They perceived that two classes of activities were embedded in the term; knowledge about cognition and regulation of cognition. Further, Flavell recognised that although the statement that

metacognition is about the knowledge and control of the cognitive system seems relatively clear cut, in practice it is often very difficult to determine what is a cognitive and what is a metacognitive process (as cited in Brown, 1987). In other words, metacognition is an umbrella term, which involves two interrelated but distinct thinking functions that are difficult to separate from cognitive function.

Two types of metacognitive knowledge are distinguished in the literature. First there is metacognitive knowledge about domain knowledge. This includes knowing what is known and knowing what needs to be understood. Second there is metacognitive knowledge about strategic knowledge. Metacognitive strategic knowledge includes when to use a strategy, what strategy would be most effective to use, how effective a strategy is likely to be and how effortful a strategy is to use. In addition the self-regulatory function of metacognition includes skills such as monitoring, checking and self-testing.

A Model for Strategic Learning

From their work in teaching children to use strategies for remembering information Borkowski and his co-workers developed a model (see Figure 1.1) which defined; first the relationships between cognitive strategies and metacognitive strategies, and secondly the relationships between metacognitive knowledge about strategies and metacognitive monitoring functions about strategies (Pressley, Borkowski, & O'Sullivan, 1985).

This model postulated that a sophisticated learner has a strategy repertoire involving many strategies. In addition the learner has metacognitive knowledge, termed specific strategy knowledge, about these strategies. This knowledge includes:

- a strategy's goals and objectives;
- tasks for which the strategy is appropriate;
- its range of applicability;
- the learning gains expected from consistent use of the strategy;
- the amount of effort needed to apply the strategy; and
- whether the strategy is enjoyable or burdensome to use.

As learners develop an increasing repertoire of strategies, which they apply successfully and unsuccessfully they acquire a more general understanding of strategy use termed general strategy knowledge (see Figure 1.1) (Borkowski, Milstead, & Hale, 1988). These general understandings include such knowledge as:

- it takes effort to apply strategies; and
- strategies aid learning if properly applied.

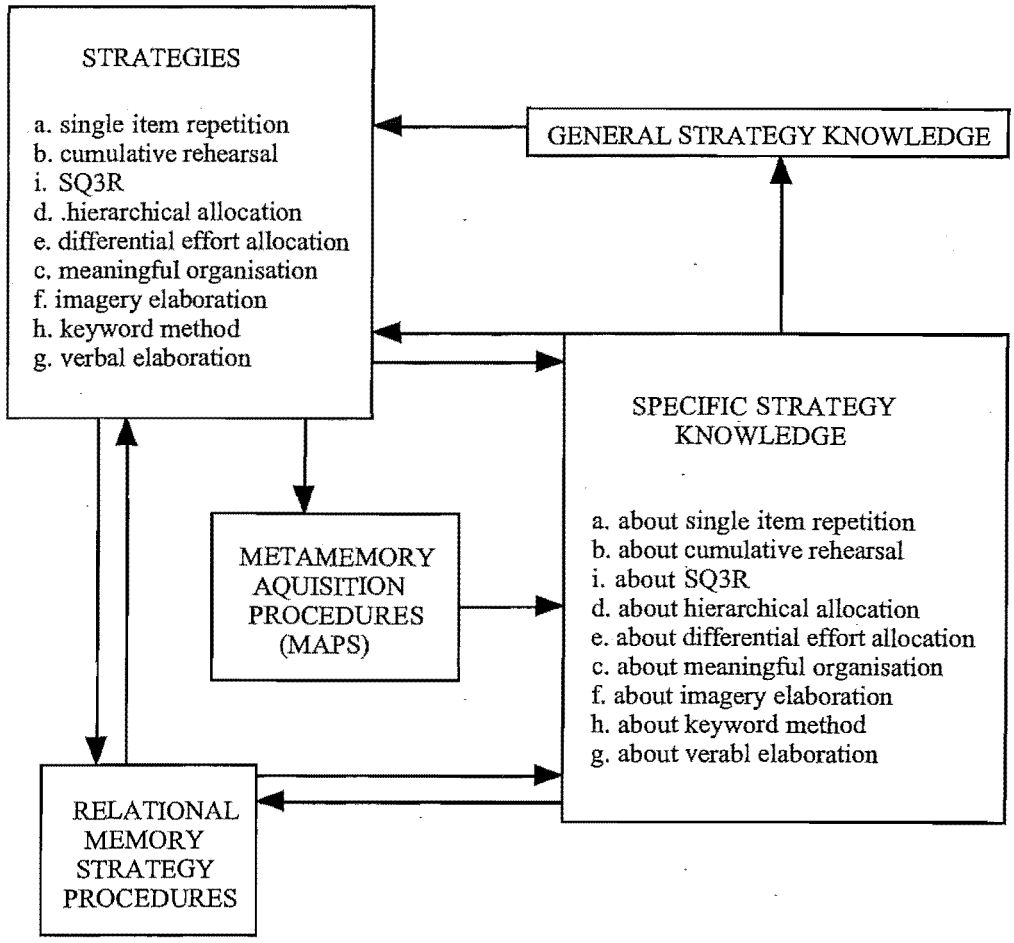

Figure 1.1 Metacognition about strategies for remembering (Pressley, Borkowski and O'Sullivan, 1985, p. 116).

Borkowski et al. (1988) suggested that as a learner develops more comprehensive specific strategy knowledge and general strategy knowledge further strategies are learned more quickly and used more readily.

Two further types of metacognitive knowledge about strategies were postulated. The first, relational strategy knowledge, is the knowledge a learner develops about the common characteristics of two or more strategies. The second, metamemory acquisition procedures (Borkowski and his co-workers were researching memory strategies), are the metacognitive processes by which learners make

decisions on how and when to use a strategy; that is the rules that govern the use of strategies (see Figure 1.1).

Typical problems that learners experience with using strategies include, continuing to use the strategies they know effectively and transferring a strategy they have found useful in one situation to other appropriate situations (Brown, 1987). As learners acquire more general strategy knowledge and more metacognitive acquisition procedures, learners should be more likely to transfer the application of their learned strategies to related similar and novel tasks. But such sophistication in thinking is often late developing (Borkowski et al., 1988).

Learners may not always have conscious access to their cognitive and metacognitive knowledge and strategies. Explicit teaching of cognitive strategies, metacognitive knowledge about the strategies and metacognitve monitoring strategies should give learners conscious access to such thinking skills and enable them to verbalise such thinking (Brown, 1987).

Results from research programmes involving strategy instruction were disappointing. Initial research programmes used direct strategy instruction in an effort to remediate performance difficulties. Gains in learner performance were usually small, transient and occurred only on tasks which were very similar to the training task.

Faced with the elusiveness of strategy generalization Borkowski et al (1992) concluded that learners do not automatically find pleasure in the application of the effort required to use strategies and improve their skills. To many adolescent students, more effort confirms a self-concept of less ability even if such effort has resulted in improved performance (Nicholls, 1984; Stipek, 1993). For consistent generalisation of strategy use Borkowski et al. (1992) now contended that not only was cognitive and metacognitive strategy use important but, in addition, the learner's cognitive motivational beliefs and consequent affective reactions must be included in the theory (see Figure 1.2). Further, for such an effort related feedback relationship to be successful, the learner must perceive that the effortful application of strategies is a positive factor for success rather than a negative reflection on ability.

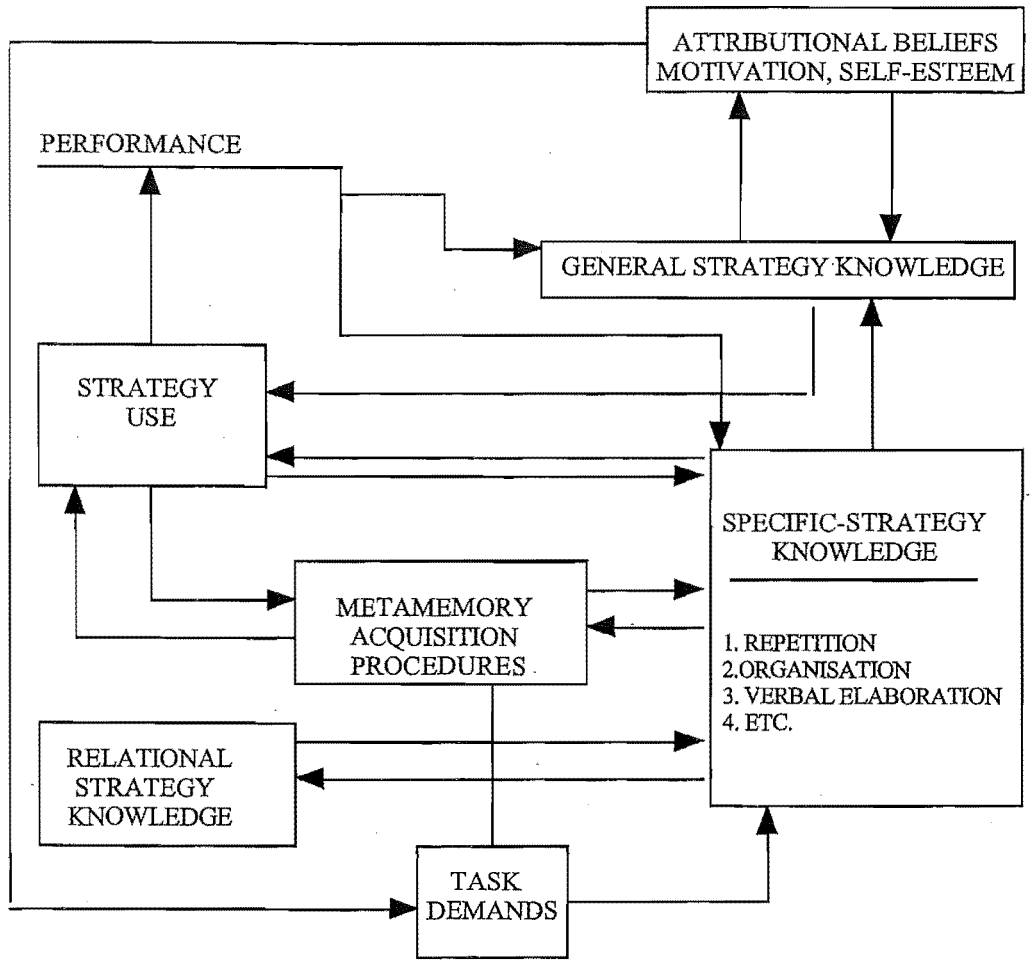

Figure 1.2. A model of mature metacognition about memory strategies. Specific, relational and general knowledge as guided by Metamemory Acquisition Procedures, (Borkowski, Milstead & Hale, 1998, p. 83). Attributional beliefs have been included in this model.

Cognitive Motivational Beliefs

In its earliest form cognitive motivational theory contended that a person's expectation of success or failure on a task determined whether a person would approach or avoid that task. The successful or unsuccessful completion of the task was said to be associated with an affective response. Pride was experienced if a task, and especially a difficult task was completed successfully. Shame followed failure and especially failure on an easy task (Atkinson, 1957).

Where Atkinson had focussed on expectations of reward Rotter (1975) considered that a person's beliefs about the locus of control of the determining factors in each successful or unsuccessful

completion of a task were important. An internal locus of control related to a person's behaviour or to relatively personal traits such as ability. An external locus of control related to events beyond a person's control such as luck or teacher bias. An increase or decrease in performance expectations following success or failure on a task respectively, were associated with an internal locus of control. Success or failure resulting from an external locus of control gave no clear implications for future performance (Weiner, 1985).

Weiner et al. (as cited in Weiner, 1985) extended Rotter's (1975) concept of locus of control to include the properties of stability and controllability. They realised that some internal causes such as ability are apparently stable whereas others such as effort or mood are more likely to fluctuate. Among external causes task difficulty may be thought of as stable whereas luck could be thought of as unstable. Further consideration gave rise to the realisation that attributions should be thought of in terms of each person's own beliefs as ability may be unstable if further learning is possible, effort can be a stable trait, tasks can be adjusted to be more or less difficult and luck can be thought of as a property of a person; a lucky or unlucky person.

Controllability was also considered to be an important consideration. Mood, fatigue and temporary effort may be regarded as internal and unstable but temporary effort can be distinguished from mood and fatigue as it can be subject to volitional control where mood and the onset of fatigue are not. The same distinction can be made for apparently internal, stable causes. Where laziness and tolerance are seen to be under volitional control, maths, artistic aptitude and physical coordination are not (Weiner, 1985).

Attributions should therefore always be considered in terms of each person's beliefs as there are likely to be person-to-person and situation-to-situation variations in the classification of frequently considered causes such as ability, effort, task difficulty, mood, fatigue and luck. A summary for the most usual placement of these causal attributions is shown in Table 1.1 (Stipek, 1993).

In attribution theory the stability of the cause of success or failure on a task rather than the locus of control was postulated to determine shifts in performance expectations. Successes or failures that are attributed to a stable cause are perceived as being repeatable. They lead to increases or decreases in performance expectations. Unstable causes lead to uncertain outcomes and therefore do not lead to permanent changes in performance expectations.

Successes or failures on skill tasks are usually attributed to ability, a stable cause, and to effort. The belief that effort is a causal factor in success usually results in the application of effort in future tasks.

If success is achieved without effort then the belief may develop that effort is not necessary for success and the individual's achievement potential may not be realised. Success on unstable chance tasks is perceived as not being repeatable and the performance expectancy for future tasks is unlikely to be raised (Weiner, 1985).

Table 1.1. Dimensions of causality (Stipek, 1993, p. 128)

	Controllable		*Uncontrollable*	
	Stable	Unstable	Stable	Unstable
Internal locus	typical effort	immediate effort	aptitude	mood; fatigue
Eternal Locus			task difficulty	luck

Attributions and Affect

Both the outcomes of attempts at a task and the causal attributions for the outcome are postulated to engender affective responses. Outcome affective responses are said to include happiness for success and frustration and sadness for failure (Weiner, 1985).

The initial affective response to an outcome, is thought to be followed by a causal belief. A variety of further affective responses to this ensuing causal belief have been postulated. These are dependent on the locus of control, the stability and the controllability of the attribution. For example, success as a consequence of good luck engenders surprise but success as a consequence of sustained effort results in calmness and serenity.

Weiner (1985) summarised the results of the attribution-emotion research as follows:

- Pride and feelings of self-esteem are linked with causal factors having an internal locus of control such as ability and effort.
- Shame associated with failure is linked to an uncontrollable causal factor with an internal locus of control; ability.
- Guilt is linked to a controllable factor; effort.

Self-Worth Theory of Achievement

Achievement behaviour appears to be determined by an interplay between expectancy for success or failure, the locus, stability and controllability of the causal attributions and the resultant emotions. Covington (1984) integrated these findings into his self-worth theory which propounds that individuals have a need to protect their sense of worth or personal value.

Individuals are said to strive for success not only for the social and personal rewards that accrue but also because successful achievement establishes a belief in personal ability. When failure is the outcome, individuals act to minimise the implication that the outcome was caused by lack of ability.

Achievement builds self-worth and ability is valued as the important factor in such success. Most individuals view effort as a principal factor in success. But for older students (American junior high school level) effort becomes a double-edged sword. Students see effort as important in self-worth and an important causal factor in achievement. Effort reduces the guilt associated with non-compliance with the work ethic. However, high effort associated with failure suggests a lack of ability, which triggers emotions such as shame and humiliation. Students who instead describe themselves as unmotivated and lazy maintain a better self-worth because their self-perception about their ability has not been lowered.

Entity and Incremental Theorists

In a further conceptualisation of a learner's implicit beliefs Dweck (1990) formulated a theory about the self-attributes such as intelligence to explain why, given equal ability, some are mastery orientated and respond to challenges with enthusiasm and effective persistence. Yet others have a maladaptive, nonpersistent or helpless pattern and deteriorate or give up. She postulated that individuals exhibit one of two patterns of beliefs about their ability.

Students exhibiting the first pattern hold an 'entity' view of intelligence where ability is seen as a stable characteristic of the individual. If two students exert the same amount of effort on a task the student with more ability should experience more success. Entity theorists set themselves performance goals where there is no risk of failure and the true extent of their ability cannot be measured. Such tasks include easy tasks that require little effort, tasks where they will make few mistakes and tasks which they are likely to finish first.

For some students such a view of ability can lead to a pattern of helplessness because they believe that they do not have the ability to complete achievement tasks successfully (see Table 1.2). Dweck

(1990) commented that, "the entity system puts self-esteem and self-development in conflict with each other" (p. 209). Individuals who strive for performance recognition may do so at the expense of exerting effort on challenging tasks and developing mastery of such tasks through their experience. "--- what you do to feel smart and what you must do to learn new things are at odds with each other." (p. 209)

Table 1.2. Theories, goals and behavior patterns in achievement situations (Dweck & Leggett, 1988, p. 259).

Theory of intelligence	Goal orientation	Perceived present ability	Behavior pattern
Entity (intelligence is fixed)	Performance (goal is to gain positive judgments/ avoid negative judgements of competence)	High	Mastery oriented (seek challenge; high persistence)
		Low	Helpless (avoid challenge; low persistence)
Incremental (Intelligence is malleable)	Learning (goal is to increase competence)	High or low	Mastery oriented (seek challenge that fosters learning; high persistence)

The second pattern involves an 'incremental' view of intelligence where ability is viewed as a quality that can be developed through effort and persistence. Dweck (1990) theorised that students holding this view derive satisfaction from feeling clever when working for learning and mastery, when working on something moderately difficult, when they master a task they had previously not understood and when they think out something new. For these students self-concept and self-development work in harmony. "--- what you do to feel smart and what you do to learn are the same – namely, exert effort on a challenging task" (p. 209).

Strategic Learning, Academic Self Beliefs and Affect

Faced with difficulties in eliciting strategy generalisation from students, Borkowski et al. (1992) theorised that effort is required for the mindful and successful application of strategies and the reward for such effort is an eventual improvement in performance. In a feedback relationship, effort and the application of strategies are metacognitively evaluated by the learner and seen to produce a

successful outcome. This successful outcome in turn leads to further strategy use. General strategy knowledge is then developed about strategy use. Such knowledge includes evaluations such as:

- Effortful application of strategies brings improved performance;
- Well chosen strategies improve the effectiveness and the efficiency of performance; and
- Strategic plans should be made before engaging in a task. Such plans should be modified as necessary for an effective performance.

Such metacognitive general strategy knowledge is considered to have a motivational quality involving high self-esteem, positive self-efficacy, an internal locus of control and the result that the student attributes success to effort. Effort is perceived as a consistent and controllable causal factor unlike uncontrollable factors such as ability or luck (Borkowski, Carr, Rellinger, & Pressley, 1990).

If learners perceive that they are successful and that their success is brought about by their effortful and skilful application of strategies to the challenges they encounter in learning and problem solving, then it is suggested that their self-belief systems, their metacognitive knowledge and monitoring and their cognitive strategy knowledge and applications all mature together in reciprocal feedback relationships.

If learners perceive that failure is due to lack of effort they are likely to vigorously apply effort on future occasions. Their self-belief systems and their cognitive and metacognitive strategic applications will also grow in maturity (Borkowski et al., 1990).

But many learners and especially high school learners perceive that the need to apply effort, and especially more effort than their peers, implies less ability (Covington, 1984). For the effortful application of cognitive and metacognitive strategies learners need to perceive or perhaps be taught to perceive that effort is a controllable factor, which usually leads to successful task completion and consequent feelings of pride.

If a positive self-system is to be maintained failure in strategy application should be avoided as such failure leads to negative beliefs about ability and consequent decreases in self-concept. If failure is unavoidable learners may attempt to attribute it to other factors such as lack of effort in strategy application, a controllable factor, or to task difficulty an external factor. The expenditure of effort in the face of failure increases the perception of low ability (Borkowski et al., 1990).

Motivational, Cognitive, Metacognitive Relationships

Incremental learners believe that with the effortful application of strategies they will improve task mastery. They display a willingness and persistence in tackling challenging tasks, behaviour which is independent of their ability beliefs (Borkowski et al., 1990; Dweck, 1990). Borkowski et al. (1990) postulated that learners with such positive self-systems are more likely to develop a repertoire of specific strategy knowledge, which they can generalise to new tasks because they have developed mature general strategy knowledge. Further, the increase in effort to gain mastery over challenging tasks could lead to new insights into the application of specific strategies in novel situations. Such new insights enable mastery-oriented children to acquire new metacognitve acquisition procedures such as knowing how to select the best strategy for the task, how to change strategies if they are not effective and how to increase the sophistication of the metacognition acquisition procedures they have already acquired. Their cognitive and metacognitive systems for monitoring strategies evolve towards maturity in complex feedback systems which involve attributional beliefs and affective states. The students are rewarded for their efforts by experiencing pride in their achievements.

Students holding entity beliefs may limit the extent to which challenging tasks are chosen and as a consequence they may underachieve. It is likely that such students do not develop such comprehensive metacognition acquisition procedures. As a consequence, as time passes their achievements are limited still further.

To summarise, Borkowski and his fellow workers have developed a model that conceptualises the relationships between cognitive and metacognitive process skills. They postulate that the metacognitive system provides the necessary process skills for students to complete tasks. They state that students require good general and specific strategy knowledge, that is, the knowledge about "why, when, where and how to use strategies" (Borkowski et al., 1990) for the metacognitive system to work. But it is the self-system, the academic self-beliefs and the resultant affective states experienced as a result of those beliefs that provide the necessary motivation for students to apply this knowledge with effort.

The emotional experiences resulting from the students' successes and failures in deciphering and their self-beliefs about reading were not investigated in this study. However, the literature involving the emotional experiences is presented in this review because this emotional overlay to success and failure and to attributional beliefs appears to be an influence that may make these experiences and beliefs very powerful in determining a student's academic behaviour.

Social Cognitive Theory and Self-Efficacy

Self-Efficacy

Where cognitive, motivation theory considers that thoughts and beliefs mediate behaviour, social, cognitive theory (Bandura, 1986) theorised that a student's expectation of reinforcement for a behaviour is more important than any previous reinforcement that has been experienced. Students interpret their history of reinforcement in terms of their interpretations of their performances on remembered tasks and their personal biases. They actively process events and develop expectations for future reinforcement. These are more important determinants of behaviour than past experience.

Bandura (1986) believed that, "Perceived self-efficacy is a judgement of one's capability to accomplish a certain level of performance ---" (p. 391). He wrote that it is perhaps the most important facet of self-knowledge and should be distinguished from outcome expectation, which is a judgement about the outcome that an action may produce.

Students perceive that outcomes they care about are determined by their ability to complete tasks successfully. Self-efficacy judgements are context dependent and are made before the student performs an immediate task. Their judgements involve mastery criteria. For example, students rate their certainty that they can solve mathematical problems of varying levels of difficulty and not how well they expect to perform in relation to other students. These self-efficacy judgements do not have a performance judgement on how well they will perform in relation to other students (Zimmerman, 1994). In social, intellectual and physical activities people who judge themselves as highly efficacious expect favourable outcomes and undertake such activities with assurance. Individuals who judge that they do not have the ability to effect a successful outcome on particular tasks will be likely to avoid such tasks (Bandura, 1986).

Self-efficacy judgements are context dependent and are made before a student performs an immediate task. The judgements that the student makes are based on mastery critierion. For example, students might rate their certainty that they can solve mathematical problems of vaying levels of difficulty.

Fairly accurate assessment of ability on tasks is a necessary part of successful functioning. Self-efficacy judgements that slightly exceed a student's capabilities are seen to be of most value. Such appraisals encourage individuals to engage in and persist longer on challenging tasks, with a greater likelihood of success, leading to progressive self-development. When self-efficacy is too low self-

doubt is likely to inhibit performance but when self-efficacy is too high over confidence may result, leading to lack of care and effort (Bandura, 1986).

Bandura (1986) distinguished self-efficacy from self-esteem. Where self-efficacy concerns the judgement of personal capabilities, "self-esteem pertains to the evaluation of self-worth which depends on how the culture values the attributes one possesses and how well one's behaviour matches personal standards of worthiness" (p. 410).

Students use four sources of information in academic situations to make self-efficacy judgements: actual performance attainments, vicarious experience, verbal persuasion and physiological arousal (Bandura, 1986).

- Performance Attainments

  Authentic mastery experiences are the most influential sources of information. Success or failure raises or lowers self-efficacy evaluations respectively. Failure early in a task is particularly damaging to self-efficacy if it does not reflect lack of effort or adverse circumstances. Occasional failures are unlikely to destroy a strong sense of self-efficacy as they are likely to be attributed to external factors such as insufficient effort or poor strategies. Failures that are overcome by determined effort are likely to strengthen self-efficacy to the point where the student comes to believe that the most difficult obstacles can be mastered.

- Vicarious Experience

  Observing other students successfully complete an activity can have a positive effect on self-efficacy. The observing students can come to believe that they can also complete the activity successfully. Similarly observing other students with similar ability levels fail to complete a task can lower self-efficacy beliefs. Vicarious experience is thought to be a weaker influence than direct experience.

- Verbal Persuasion

  Attempts are often made to verbally persuade individuals that they are capable of successfully completing a task. If such persuasion raises students' self-efficacy to the point where they believe they are able to successfully complete a task, they may increase their efforts enough for a successful outcome. Permanent gains in self-efficacy accompanying the permanent gains in achievement may then result. If, on the other hand, persuasion results in unrealistic beliefs from which further failure follows, self-efficacy beliefs will be lowered. Bandura (1986) commented that it is probably very difficult to produce permanent increases in self-efficacy by persuasion as

persuaded individuals are likely to avoid challenging tasks and give up quickly in the face of difficulties.

- Physiological State

  Students use information from their physiological states and responses to form their self-efficacy judgements. Although some nervousness may result in increased achievement, students usually believe that they achieve better results if they are not extremely tense and viscerally agitated. Sometimes students experience the very failure they feared because of their behavioural responses to their inefficacious beliefs.

Bandura (1986) observed that although information from these four sources may be available and relevant to self-efficacy judgements, students may not cognitively process it to integrate it with self-efficacy judgements. Students are more likely to mistrust their positive performances than to engage in tasks where they risk failure. For this reason even noteworthy performances may fail to lift their self-efficacy. "--- producing enduring, generalised changes in self-efficacy requires powerful confirmatory experiences in which people successfully manage task demands that far exceed those commonly encountered in their daily lives" (p. 401).

Self-efficacy beliefs are formed in terms of students' causal attributional beliefs about ability, locus, task difficulty and effort. For example, high self-efficacy is achieved through successes with minimum effort on difficult tasks. Hard work on easy tasks under favourable conditions is likely to lower self-efficacy judgements. In addition, self-efficacy beliefs are maintained in a feedback relationship with beliefs about ability. Self-efficacious students tend to attribute their successes to ability but ability attributions affect their performances through perceived self-efficacy.

In conclusion, social cognitive theory and cognitive motivation theory portray some consistencies in the beliefs and behaviours that students exhibit in achievement contexts. These include:

- Engaging in tasks where success is likely and pride will be experienced and avoiding tasks where failure and the concomitant shame will be experienced.

- Exhibiting behaviours that are likely to maximise attributions of high ability, a characteristic that is seen as stable, internal and uncontrollable.

- Controlling the application of effort to maximise high ability attributions even if such behaviour is self-defeating and leads to failure and teacher censure.

- Striving for performance goals may result in students believing they do not have the ability to complete their achievement tasks whereas striving for mastery goals may result in a mastery pattern of learning regardless of the students' beliefs about their ability.

Self-Regulation for Academic Achievement

Bandura (1986) developed a theoretical approach to self-regulated learning as part of his social cognitive theory. The presence of a self-system was postulated. This included the cognitive and affective systems along with such diverse abilities as the ability to symbolise, to learn from others, to plan and execute appropriate strategies, and to regulate behaviour and engage in self-reflection. The self-system is seen as having the function of perceiving, regulating and evaluating behaviour and a self-regulatory function which allows the alteration of learning environments and the adaptation of actions (Pajares, 1996). "Students could be described as being self-regulated to the extent that they were metacognitively, motivationally and behaviourally active participants in their own learning process" (Zimmerman, 1989, p. 4).

Students' academic competencies are first developed through social sources. They are then internalised to self-sources through a series of learning phases. Learners can assimilate much of a learning strategy from watching a model. For complete mastery, most students require some active participation in performing the strategy. At the imitative level a model provides guidance, feedback and social reinforcement. As the learner practices by copying, strategy use becomes more accurate (Schunk & Zimmerman, 1996).

At more advanced levels the source of learning shifts from a social to a self-controlled level of learning, which is characterised by the student's independent use of the strategy on transfer tasks. Finally, as adolescents, students achieve a self-regulated level of learning. They are then able to change their strategy use in accordance with the requirements of their personal and contextual situations. Students then possess the academic competence to initiate and adjust their strategy use in accordance with the contextual situation. Motivation is sustained by self-efficacious perceptions (Schunk & Zimmerman, 1996).

Social cognitive theory postulates three processes that contribute to self-regulation: Self-observation, self-judgement and self-reaction (Bandura, 1986). Students set goals such as acquiring the skills and knowledge, finishing work, and achieving good grades, or in terms of this study reading the passage independently and accurately or perhaps deciphering more unfamiliar words independently, a less

distant goal. Throughout their involvement with the activity students observe, judge and react to their own progress towards the learning goals they have set (Schunk, 1994).

Self-reactions to judgements about progress towards a goal may be evaluative reactions that involve their beliefs about their progress. Self-efficacy and motivation are increased if it is perceived that progress is being made towards the learning goal with the consequent anticipation of satisfaction of perhaps pride in goal accomplishment. Motivation remains high in spite of negative evaluations if the student perceives that improvement is possible, perhaps with greater effort or more effective strategy application (Schunk, 1994)

These processes are also interactive with the learning environment. Students may seek help from a teacher when they judge that their progress is not sufficient for efficient goal completion. The teacher may advocate a more effective strategy, which the student adopts. In this way the environment and the self-regulatory processes enable the student to apply and self-regulate strategies for the most effective and efficient attainment of learning goals (Schunk, 1994).

Research results on the relationship between attributional judgements, self-efficacy and goal attainment have been variable but the following general conclusions are usually substantiated. Students who attribute success to external and uncontrollable factors such as luck and task ease may have low self-efficacy if they believe that they cannot complete the task on their own. If students believe that they do not have sufficient ability to complete the task they may judge progress towards their goal as unacceptable and lose motivation to apply the necessary effort. Students who attribute success to ability, effort and effective strategy use should have sufficient self-efficacy to maintain their motivation to attain their goals (Schunk, 1994). These attributions, which are postulated to relate to positive and negative self-efficacy, echo the relationships that are postulated to relate to the establishment of more, or less effective general strategy knowledge in metacognitive theory.

The models of metacognition developed by Borkowski and his fellow workers define their conceptualisation of the relationships between cognitive and metacognitive strategies, and the relationships between metacognitive knowledge about strategies and metacognitive monitoring functions about strategies. The development of these models was published between 1985 and 1988. Zimmerman and Schunk began publishing their conceptualisations of self-regulation in 1989.

These two theories have been established in a similar time frame but have grown out of separate and distinct research clusters. Although Zimmerman and Schunk describe self-regulation as being metacognitive, motivational and behavioural, they do not conceptualise the metacognitive

relationships within their model and nor do they link these back to any of the models developed by Borkowski and his team of researchers. Borkowski and Thorpe (1994) have an undeveloped inclusion of self-knowledge and learning goals in their updated model. If work in complex and related constructs such as metacognition and self-regulation is to progress it seems to be of some importance that attempts are made to link the conceptualisations in theories arising out of different research clusters.

Intrinsic and Extrinsic Motivation

Eccles et al. (as cited in Wigfield, 1994) proposed that students' perceptions of the value of the task as well as their expectations of success or failure influenced whether they approached or avoided tasks. Wigfield defined four major components.

- Attainment value: the importance of doing well on a given task.
- Intrinsic value: the enjoyment gained from doing the task.
- Utility value: the usefulness of the task in relation to future plans.
- Cost: what the individual has to give up in order to complete the task and the anticipated effort required to complete the task.

Wigfield considered that the intrinsic value component in this classification had a similarity to intrinsic motivation which Ryan and Deci (2000) defined as the engagement in a task for the satisfaction of doing it rather than for any motivation external to the task. Intrinsic motivation is enhanced by two factors. The first is a feeling of competence, or self-efficacy, during the performance of the tasks, which results in a feeling of satisfaction. The second is a sense of autonomy or self-determination, which has an internal locus of control. Research studies over recent years have shown that homes and classrooms that engender a sense of autonomy increase feelings of intrinsic motivation which engender a sense of curiosity and a desire for challenge. Overly controlled students appear to lose initiative and achieve at a lower level, especially where learning is more complex or requires conceptual, creative thinking. However, intrinsic motivation is only experienced for tasks that are novel, challenging or aesthetically appealing for the student.

But as students progress through their years of schooling the demands of society and schooling increasingly expect students to engage in tasks that do not intrinsically motivate them. Ryan and Deci (2000) have presented a taxonomy of motivation which not only defines lack of motivation, extrinsic

motivation and intrinsic motivation but also presents a continuum for extrinsic motivation that delineates the extent to which the motivation to engage in a task is externalised or internalised.

In this model extrinsic motivation is affected by the extent to which engagement on a task is autonomous. Students engage in some tasks because they fear the consequences of not doing so. For example, students may complete homework solely to avoid sanctions from parents or the teacher. In these circumstances students are extrinsically motivated into compliance in order to avoid unpleasant repercussions. Such motivation has an external locus of control.

In other situations students comply either to avoid feelings of guilt or anxiety or because they have performance based beliefs. These feelings and beliefs are accompanied by feelings of pressure. Such extrinsic motivation also has an external locus of control (Ryan & Deci, 2000).

If students complete tasks in the belief that they will be of value in their chosen careers, although the students are still extrinsically motivated they feel that they do have a choice. In Wigfield's terms (1994) they believe the task has attainment and utility value for them. They personally endorse their participation. Because the students identify with this type of extrinsic motivation it is more autonomous (Ryan & Deci, 2000).

Students may have internalised and assimilated the reasons for their task involvement. Such students feel autonomous and without outside pressure to complete a task. Yet such motivation for task involvement is not intrinsic motivation because the value of the outcome remains external to the student.

Students' perception that they have greater control results from their internalisation of their motivation for a task that they are extrinsically motivated to perform. It is therefore important in school programmes to recognise and understand factors, which encourage students to internalise their motivation. One of the principal reasons students come to value such tasks is because they are valued by significant others to whom they feel a sense of relatedness. It is therefore important to create a sense of belonging in students. In classrooms and remedial programmes this highlights the importance of students' feeling that they are respected and cared for by their teachers (and parents). Students will only internalise their extrinsic motivation for a goal if they feel efficacious about completing it (Ryan & Deci, 2000).

Learning by understanding calls for active, self-generated, self-organised and self-controlled learning. It occurs in learning environments where students have optimal support for their learning

but experience a sense of autonomy, where the teacher role is faded from a teaching role to a coaching role as the student gains mastery of the task. When mastering new information and strategies most students feel they have little control over their learning outcomes. They may even feel helpless. Teacher support for students through these initial learning stages requires continual teacher modelling, guidance and feedback. Most students see such instruction as supportive. However, if such support is continued after the initial learning stages it may be perceived as controlling (Boekaerts, 1996). Students' feelings of autonomy would then be lowered, as would the internalisation of their extrinsic motivation. Considerations of intrinsic motivation and factors which increase internalisation of extrinsic motivation such as self-efficacy, autonomy and relatedness, are of special significance in remedial teaching situations.

Learning Disabilities, Strategic Learning, Self-Beliefs and Affect

Stanovich (1986; 1988) in his consideration of reading disability proposed that a learning disabled child might begin at school with a specific deficit in phonological processing, which would impede normal progress in recognising letter-sound associations and so lead to decoding difficulties. He introduced the concept of Matthew effects to describe the situation where the effect of initial and persistent failure leads to motivational problems. These motivational effects in turn prevent effortful and strategic engagement first in reading and later in other achievement related tasks.

Torgesen (as cited in Stanovich, 1986) concluded from his work on memory function with learning disabled students that such students can be regarded as inactive learners who often fail to apply the cognitive strategies that lie within their grasp. Failure to use cognitive strategies is thought to be related to deficiencies in metacognitive functioning. Metacognitive strategies for reading are developed through reading and the self-regulatory component of metacognition is dependent on motivation. Therefore a poorly motivated disabled reader with little reading experience can be expected to show metacognitive deficits as a consequence of their learning disability (Stanovich, 1986, 1988; Wong, 1991).

Research into the reading comprehension of reading disabled students by Wong (1991) indicated that the reading disabled do develop metacognitive strategies, but not the sophistication of strategies that the non-reading disabled exhibit. Because the reading disabled experience with reading differs from that of the non-reading disabled students the metacognitive strategies they develop may be similar but with a different focus.

Reading disability students have a persistent learning disability with which they will always have to cope. Such children are less self-efficacious and hold lower expectations for success than their peers. They are less likely to believe that they can change their achievement levels with effort and persistence and may even generalize these beliefs to tasks where they have not experienced failure. Learned helplessness in achievement domains can be the sad consequence for individuals who experience a great deal of failure (Licht & Kistner, 1986). Failure is attributed to lack of ability, a stable internal factor over which such individuals believe they have no control. Any success is attributed to external uncontrollable factors such as luck, an easy task or even a controllable factor such as effort (Licht & Kistner, 1986; Stipek, 1993).

Such negative attributions contribute to poor self worth (Covington, 1984) and result in dysfunctional metacognitive and self-systems. "The dysfunctional metacognitive and motivational components of learning disabled children, in turn, increases the likelihood of failure and reinforces negative self-evaluation, thus perpetuating the failure cycle" (Borkowski et al., 1990, p. 67). In school these students exert little effort, give up easily in the face of difficulty, are unresponsive to any teacher intervention and appear disengaged from classroom activities (Stipek, 1993). They do not persist with problem solving and frequently engage in off task behaviour or task avoidance behaviours (Chapman & Tunmer, 1996).

Teaching Implications

Research indicates that teachers offer frequent praise to reading disability students in the belief that such praise will lift their self-esteem and change their attitude to learning. Yet it is not the reading disabled's attitude to learning that is the problem but their attitude to themselves (Chapman & Tunmer, 1996; Licht & Kistner, 1986).

If reading disability students are to make progress they must develop the belief that, although they have a learning disability, progress is possible. Teaching must address cognitive and metacognitive strategies in a wide variety of tasks. In addition, attributions should be altered so that success is attributed to the appropriate and effortful application of strategies (Borkowski et al., 1992; Schunk, 1994).

An attribution retraining programme must be built around materials that have appeal and are at an appropriate level for the learner. Successful outcomes may be attributed to external factors such as an easy task if the materials are too easy. Task avoidance or the confirmation of an attribution to lack of ability may occur if the task is too difficult (Chapman & Tunmer, 1996).

Craven, Marsh and Debus (as cited in Chapman & Tunmer, 1996) suggested that teacher feedback in response to successful achievement outcomes should refer to the correct use of the strategy, the effort and persistence shown by the student and should also affirm that the student has sufficient ability to complete the task. That is, teacher feedback should consistently establish a link between the correct and effortful application of a strategy and a successful outcome. They postulated that given time, continuing success and directed feedback, associations should be made between these attributions, appropriate strategy application and pride of achievement.

When reading disability students fail, teacher feedback should be directed to inaccurate strategy use and lack of effort or persistence. Again it is important to confirm that the student has the ability to achieve a successful outcome. Teacher honesty with appropriate responses is seen to be essential if attribution retraining is to be successful and feelings of helplessness overcome (Chapman & Tunmer, 1996).

Wong (1994) noted that learning disabled students have difficulty with transferring strategies. "The notion of insufficient mindfulness during strategy learning appears to explain the difficulties in obtaining transfer among students with LD" (p 111). Wong suggested that the typical intervention for learning disabled students rarely permits them to engage in deep and intent thinking. Many intervention programmes fail to give these students the opportunity and time to reflect on the relationship between their strategy use and their subsequent learning outcome, or the successful outcome is pointed out to them rather than having them reflect for themselves on the consequence and the relevance of their strategy use. Therefore, learning disability students fail to learn when to apply strategies and fail to seek connections between prior learning and new learning. An attribution retraining programme must encourage learning disabled students to monitor and self-evaluate their own strategy use.

Remedial Reading Programmes

The Importance of Phonological Processing

If beginning readers are to understand the alphabetic code which is used to represent words in writing then a knowledge of the sounds, which the letters represent in words, is necessary. Phonemic awareness refers to the ability to distinguish the sounds that make up words. Phonemeic awareness refers to the awareness at the level of a single sound in a word, that is, the smallest unit of sound that makes a difference to the meaning (e.g. /r/-/a/-/t/). 'Rat' and 'bat' have different meanings because

the /r/ and the /b/ are different phonemes. Nicholson (1999) states that some researchers distinguish between phonemic awareness and phonological awareness phonological awareness. Phonological awareness can have a wider meaning and include awareness of the structure of the word at the syllable level (in-hab-i-tant).

A study involving 54 reading disabled students ranging in age from 7 to 13 years investigated the effectiveness of teaching students to spell regular words using letter-sound associations against teaching regular and exception words by whole word methods (Lovett, Warren-Chaplin, Ransby, & Borden, 1990). Instruction was given four times a week in 35 one hour sessions. The posttests for both treatments showed that the students improved in their ability to read from the lists used in the instruction but showed no posttest gains when reading uninstructed vocabulary. That is, the students were unable to transfer the taught knowledge and skills. In addition, the results showed no differentiation between teaching letter-sound knowledge and teaching whole word recognition. Lovett et al. suggested that the students in the study had not spontaneously broken the words into subsyllabic units. They therefore failed to gain an understanding of the letter patterns corresponding to these units or the rules governing their synthesis.

The research literature reports that phonemic processing ability is predictive of low reading achievement and reading disability (National Reading Panel, 2000; Stanovich, 1999; Vellutino, Scanlon, & Lyon, 2000). Calfee, Lindamood and Lindammod (1973) investigated this relationship in 60 students from American kindergarten through to the twelfth grade (New Zealand Year 1 to Year 13). Their results showed that poor readers were not able to use phonological processing skills at the syllable level in all grades.

Gillon and Dodd (1995) reported the results of their study where explicit training in phonological processing produced accelerated results in the Neale Analysis of Reading Ability-Revised (Neale, 1988) reading accuracy scores of the students. The ten participating students were 10 to 12 years of age. All the students had previously participated in a two-year longitudinal study where they had received phonic based activities as well as whole language strategies which emphasised contextual meaning. During this longitudinal study the students had shown gradual improvement in reading achievement but their age equivalent reading scores remained significantly behind their chronological ages.

The phonological processing study had two parts. One provided training in phonological processing skills and the second provided training in semantic-syntactic skills. The ten students were randomly divided into two groups. The first received the phonological training programme followed by the

semantic-syntactic programme. The second group received the programmes in the reverse order. The students each received twelve hours of tuition for each programme over a six-week period.

The programmes for each student were planned and implemented by a speech-language pathologist. They trained learning support teachers to deliver part of the programme. The phonological awareness training programme was based on the Tracking Speech Sounds section from the Auditory Discrimination in Depth Program-Revised Edition developed by Lindamood and Lindamood (as cited in Gillon & Dodd, 1995). The following sections were used with traditional letter names:

- Simple syllable sets: ut, tut, tu
- Simple syllable chains; waug, zaug, zauth, tauth
- Complex syllable chains: kleesht, kweesht, kwoosht, kwookt

The students were trained to use colour blocks to represent the sounds. They identified the order and the sameness or difference of the sounds in the syllables by manipulating the blocks. One block represented one sound. When the students had learned to represent each sound in a word with a block they were taught to encode the syllables they heard with letter cards. Finally the students were required to change the spoken pattern as the letter tile patterns changed. When the students had gained confidence in reading and spelling the syllables (nonwords) the skills were transferred to real words.

The students showed an average reading accuracy improvement of 18 age equivalent months in their Neale Analysis of Reading Ability-Revised (Neale, 1988) over the six month time period in which both the phonological processing and semantic-syntactic parts of the programme were delivered. The phonological processing portion of the programme had a greater impact on reading accuracy than did the semantic-syntactic programme. In a followup study Gillon and Dodd (1997) showed that increasing the number of hours of tuition of phonological processing skills that each student received from twelve to twenty hours increased the transfer effects to the full reading process.

Strategies for Deciphering

The Benchmark School is a school for American Grade 1 to Grade 8 children (New Zealand Year 2 to Year 9) with average or better intelligence who have a history of failure in reading (Gaskins et al., 1988). Many of their students have previously received intensive rule-based and/or phonics instruction. The researchers constructing the Benchmark School programme wished to use an

approach that had not previously been ineffective for their students. In the Benchmark programme the students are taught to use the words they know to decipher words they do not know. They are taught how to decipher unknown words from 120 key words by analogous use of the initial consonants or consonant blends and phonograms. (For example to decipher remind: the first spelling pattern is e or perhaps e-m. Trying e first, 'he' is on the chart. The spelling pattern is i. The key word is "find". If h-e is 'he' then r-e is re. If f-i-n-d is 'find' then m-i-n-*d*- is 'mind'. The word is 'remind'). Five new key words are introduced each week and added to a wall chart to help the students to use them. The teaching is game like and fast paced. In addition, the students are taught the structure of words including roots, prefixes, suffixes, syllables and phonograms and to be flexible enough to change the pronunciation of the vowels where necessary. They are taught to recognise the structure of language. The aim of the programme is to teach automaticity in deciphering which is not dependent on contextual meaning and a strategic approach to deciphering unfamiliar words. The programme also has a strong emphasis on vocabulary and language development.

Gaskins et al. (1988) reported that the amount and quality of instruction a student received in the programme was strongly related to their progress in word recognition. Word recognition was moderately related to the children's achievement in reading.

Lovett et al. (1994) compared the effectiveness of teaching a phonological processing skills programme with the effectiveness of teaching a strategy based programme for students with reading disability. Both programmes were designed to facilitate the transfer of word recognition skills to unfamiliar words. In the first programme improved transfer was to result from improved phonological processing skills. The children were trained in phonological analysis and blending through printed word representations and direct instruction of letter-sound correspondences. This programme relied heavily on the direct instruction materials developed by Engelman and his colleagues (as cited in Lovett et al., 1994).

The second programme was designed to improve transfer as a result of reliable letter-sound knowledge used along with greater metacognitive control of word identification processes. The students were taught four strategies designed to help them to use what they knew to decipher unfamiliar words. Part of this programme was based on the Benchmark School strategy training programme described above. The four strategies were: identifying words by analogy, seeking the part of the word that they knew, trying different vowel pronunciations and taking off the prefixes and suffixes.

Each treatment sample contained 62 reading disabled children ranging from 7 to 13 years in age. There were 35 sessions in each treatment. The sessions lasted for an hour and were given four times a week.

The results showed that the phonological processing treatment resulted in significant gains in the student's ability to use phonological processing and in the consistency with which they used it. As a result they showed transfer of learning effects from the programme taught materials to unfamiliar real and non-word reading for words in isolation. The strategy trained students had transfer of learning from the programme materials to the identification of unfamiliar real words. This increased ability at word recognition appeared to be as a result of their consistent and effective applications of the word identification strategies (Lovett et al., 1994).

Lovett et al. (2000), in a follow up research study, randomly assigned 85 children with severe reading disability to 70 hours of tuition in one of the following combinations of interventions. The intervention sequences were 35 hours of phonological processing followed by 35 hours of the strategy intervention, these two interventions delivered in reverse order, 70 hours of the phonological processing intervention, 70 hours of the strategy intervention, and a control intervention. The children ranged in age from 6.75 to 13.75 years. The students who received the two different interventions regardless of the intervention order had more letter-sound knowledge and knew more keywords after the intervention. They also showed greater achievement gains in untrained content including two measures of nonword reading and three word identification measures. The word identification measures assessed generalisation of learning to unfamiliar words and to difficult multisyllabic words.

Lovett et al. (2000) concluded that students in programmes that are only phonologically based do not make the best achievement gains. Generalisation of learning gains is more probable if a multidimensional approach is adopted that combines direct and dialogue-based instructional methods in teaching the students to recognise subsyllabic information with the flexible use of strategies. "The importance of strategy instruction and the promotion of a flexible approach to word identification and text reading challenges cannot be overemphasized" (p. 281).

In summary, a teaching programme for reading disabled adolescents should teach the skills and knowledge base for phonological processing and letter-sound associations. It should teach the strategies to apply the skills and knowledge and the metacognitive knowledge and monitoring strategies necessary for efficacious and persistent problem solving in deciphering unfamiliar words.

It should teach to develop functional causal attributions to the effect that the student has sufficient ability to make good progress with persistent and flexible strategy use.

The programme must be carefully designed if it is to engender, intrinsic motivation or at least internalised extrinsic motivation to read. The reading texts should have intrinsic appeal. Students must feel valued and develop a sense of belonging. They must be supported to learn new strategies and the support faded as they increase their proficiency in order that they develop a sense of autonomy. They must feel efficacious about their reading.

In such a learning environment it is postulated that not only will students make progress with their deciphering skills but they may develop sufficient pride in their achievements. With such attributions and emotions they may even become independent learners with a love of reading.

CHAPTER 2

The Selection of Students and the Teaching Programme

This study is based on the view that, for each reading disabled student the relationships between their reading and ability self-beliefs, their strategy use for word recognition and their consequent achievement will be different. These differences will result from their differing personal, home and school reading and learning histories, and their differing clusters of learning difficulties.

The study was undertaken in a secondary school setting, a very complex environment, in which the students interacted with their peer group, their teachers and the curriculum in both positive and negative ways. These interactions impinged on each student's learning in many ways ranging from missed lessons to positive and negative emotional reactions. For these reasons, each student received an individualised reading programme that was responsive to his or her individual needs and difficulties. Because the reading programme was responsive to the reading knowledge and behaviours of the participating students it evolved throughout the year for each student. For this reason, some of the case study results are anticipated throughout this Chapter in order to describe the teaching methods and philosophy.

Defining Reading Disability

In their "simple view" of reading Gough and Tunmer (1986) advocated that reading be thought of as the product of decoding and comprehension. In this relationship they stated that decoding should be thought of as closer to context free word recognition than "sounding out". They suggested that the purest method of measurement for decoding is the ability to pronounce pseudowords and defined comprehension as linguistic comprehension rather than reading comprehension.

Gough and Tunmer (1986) wrote that their simple view had interesting implications for reading disability. Where reading ability was the result of the combined processes of decoding and comprehension reading disability could exist in three different forms. In the first, dyslexia, the student has an inability to decode. In the second, hyperlexia, the student has skill in decoding accompanied by average or less comprehension. In the third, garden-variety reading disability, the student has difficulty with both decoding and comprehension. They predicted that most poor readers would have garden-variety reading disability.

Stanovich (1988) noted that the theoretical interest in dyslexia or reading disability (he stated that he used these terms interchangeably) arose out of the belief that the reading difficulties of the dyslexic differed from those of the garden-variety poor reader. He suggested that rather than expecting dyslexic's scores for reading achievement to have a discrete distribution it should be expected that the scores would lie on a graded continuum. If dyslexia were regarded in this way it would need to be operationally defined by choosing a criterion in a continuous distribution.

Stanovich further suggested that all of the relevant reading related cognitive skills be regarded as having a continuous distribution. In this model the bivariate distribution of reading achievement and IQ would be continuous. Such a model would give an unbroken gradation of intermediate cases between the dyslexic reader with a relatively high IQ for that level of reading and a garden-variety reader with a lower IQ. There would be few if any distinguishing processing differences between dyslexics with relatively low IQs and garden-variety poor readers with somewhat elevated IQs.

Stanovich (1988) wrote that even if it was not specifically stated the assumption of specificity for a cognitive deficit, underlay definitions of dyslexia. Further he wrote that there was increasing evidence that the relationship between phonological processing ability and reading achievement is a causal one. As a result of their phonological processing problems students fail to learn the necessary sound-letter information necessary for good progress in reading. That is, the garden-variety poor reader would share the problems in phonological processing of the dyslexic reader but perhaps in a milder form. But these readers would also have a wide range of cognitive deficits when compared to both normally developing controls of the same chronological age and dyslexic readers.

Traditionally operational definitions of a reading or learning disability have involved discrepancy criteria reflecting the assumption of specificity underlying definitions of dyslexia. The discrepancy criteria used have been the difference between the students' low achievement scores in reading comprehension resulting from their low achievement in word recognition or decoding (Gough & Tunmer, 1986; Stanovich, 1988) and their average or above intellectual ability scores. [As the term 'learning disability' has been widely used for learning deficits other than word recognition achievement the term reading disability, a term that is interchangeable with the term dyslexia (Stanovich, 1988) is used in this thesis].

For many years there has been debate about the validity of this discrepancy definition for the following reasons. First, research studies show that it is phonological awareness that usually predicts early progress in word recognition for readers in both high and low intelligence test result groups (National Reading Panel, 2000; Stanovich, 1999; Vellutino, Scanlon, & Lyon, 2000). The research

studies also show that intelligence test results are not predictive of either word recognition achievement in beginning readers (Stanovich & Siegal, 1994; Vellutino et al., 2000) or of how readily a reading disability student will show achievement gains as a result of remedial tuition (Vellutino et al., 2000). Siegel (1988) proposed that, as Weschler IQ scores do not appear to reflect the cognitive processes used in reading, a detailed analysis of the specific tasks involved in literacy would be a more valid approach.

Second, as Stanovich (1988) wrote associated with the use of the intellectual assessment/word recognition discrepancy is the implication that reading disability students have a specific cognitive deficit that limits word recognition ability. But, perhaps reflecting the graded continuum in cognitive skills that Stanovich (1988) suggested, these students have been consistently shown to have a wider range of difficulties, which include verbal memory, rapid automatised naming, and visual-verbal association learning in addition to phonological processing difficulties (Vellutino et al., 2000).

Third, older reading disabled students show deficits in vocabulary and syntax, presumably as a result of the limited amount of text that they have read (Vellutino, Scanlon, & Sipay, 1997). Such language deficits are reported for the participants in this study. These deficits would lower the students' scores in an intelligence test. For older students then, intelligence test results are not a suitable measure of ability.

Stanovich (1991) proposed that, if discrepancy criteria were to be used, it would be more logical to use the difference between listening and reading comprehension to differentiate between those students with reading disability and those who have more general learning problems including comprehension. He wrote that it could be presumed that difficulties with word recognition would impede reading comprehension and reading comprehension correlates with listening comprehension much more highly than with the Wechsler, the intellectual assessment which is typically used for such assessments (Stanovich, 1991). He postulated that reading disability might be better defined by the discrepancy between reading comprehension and listening comprehension scores. That is, reading disability readers were those readers whose word recognition disability prevented them from achieving their full potential in reading comprehension. Such an operational definition would also fit the model proposed by Gough and Tunmer in their simple view of reading.

Stanovich (1991) suggested that the correct text to use to measure listening comprehension was that most closely associated with the reading material it is to be compared with. That is, the student's reading accuracy score should be compared with their informal listening comprehension score obtained by reading the test passages above the passage that was at the student's test ceiling. But he

had previously cautioned in 1998 that a difficulty with any discrepancy measure was the possibility that, as a result of motivational problems and exclusion from the syllabus caused by persistent failure the reading disability had affected development in other cognitive areas including listening comprehension.

Selecting the Students

Having obtained approval for the study from the University of Canterbury Ethics Committee, six severely reading disabled adolescent participants were selected from year nine and year ten students attending a decile three, local, coeducational, secondary school. (In New Zealand a decile system is used as a measure of the socio-economic make-up of the student population. Decile 1 is the poorest and decile 10 is the wealthiest.) More senior students were not considered, as there was a higher probability that they might not be available to continue in the remedial programme in the following year, 1999. Each student and their parent or guardian gave consent for the students to enter the programme. Having joined the teaching programme, students required a written consent from their parent or guardian to leave it. This was in line with usual school policy.

The participants for this study were selected because they had a significant discrepancy between their listening comprehension scores and their scores for word recognition and reading comprehension as Stanovich (1991) suggested. (see Table 2.1). This method of selection was consistent with the models of reading disability described by Gough and Tunmer (1986) and Stanovich (1988). The objections raised to this method of selection were recognised but the focus of this study was on the students' difficulties with deciphering letter-sound associations for word recognition. Comprehension of the overall text message and of contextual meaning can be limiting factors in word recognition. Stanovich's selection method was used to ensure that, in this study ability to decipher letter-sound information for word recognition, and not comprehension difficulties were the limiting factors in the students' reading achievement.

The school screened likely candidates for the study using the discrepancy between the students' school assessed Progressive Achievement Test of Listening Comprehension (PAT LC) (Reid, Johnstone, & Elley, 1994) score, and their Progressive Achievement Tests of Reading Comprehension (PAT RC) (Reid & Elley, 1991) and, for word recognition, their Burt Word Reading Test (Gilmore, Croft, & Reid, 1981) scores (see Table 2.1). To confirm the students' school group assessment results further reading accuracy, reading comprehension and informal listening comprehension scores were obtained for each student as follows. The Neale Analysis of Reading

Ability-Revised Form 1 (Neale, 1988) was administered to determine a Reading Accuracy and a Reading Comprehension score for each student. From this administration the passage that became the test ceiling passage was determined. Passages that were more difficult than the test ceiling passage were read aloud to the students and the comprehension questions administered. An informal listening comprehension score was determined from the total number of comprehension questions answered correctly. This provided a discrepancy measure for each student between their Neale Reading Accuracy and Reading Comprehension scores and a Neale informal listening comprehension score that was determined in accordance with Stanovich's recommendations (Stanovich, 1991) (see Table 2.1).

Table 2.1. The participant students' word recognition, reading comprehension and listening comprehension scores at entry to the programme.

	AGE years February 1998	NEALE R.A. years R.C. years May 1998	NEALE L.C.years May 1998	BURT RA years July 1998	PAT R.C. 1998 age PR	PAT L.C. 1998 age PR
GARTH	12.11	R.A. 8.3 (7.9-8.10) R.C. 9.5 (8.7-10.4)	11.6 (10.8-12.5)	9.02-9.08	8	71
MARK	14.7	R.A. 8.8 (8.1-9.3) R.C. 9.8 (8.10-10.7)	12.0 (11.1-12.10)	8.01-8.07	3	56
JOHN	12.9	R.A. 8.9 (8.2-9.4) R.C. 9.8 (8.10-10.7)	12.3 (11.4-13.1)	8.03-8.09	31	81
SUSAN	13.8	R.A. 8.5 (7.10-8.11) R.C. 9.3 (8.4-10.1)	12.5 (11.7-13.4)	7.05-7.11	6	57
TOM	13.11	R.A. 8.0 (7.5-8.7) R.C. 9.3 (8.4-10.1)	12.11+ 12.0+-13.9+	7.10-8.04	3	57
DAVID	15.2	R.A. 8.1 (7.6-8.8) R.C. 9.11 (9.1-10.9)	12.11+ 12.0+-13.9+	7.00-7.06	---	83

Note: The students' ages and age equivalent scores are given in years and months. R.A. = reading accuracy; years = age in years and months; L.C. = listening comprehension; R.C. = reading comprehension; PAT = Progressive Achievement Test; + = the raw score was higher than those for which a standardised score is given; The Neale equivalent age range scores for a 68% confidence level are given in brackets.

Students who had a Burt and/or a Neale Reading Accuracy age equivalent score of below nine years and a Progressive Achievement Test of Listening Comprehension above the mean percentile rank (PR 50) for their age were initially selected. Table 2.1 lists the scores that were used to establish a discrepancy between the students' word recognition or reading accuracy scores, their reading comprehension scores and their listening comprehension scores. The six students who were selected (called Garth, Mark, John, Susan, Tom and David in this study) had Neale word recognition scores

and reading comprehension scores that were significantly lower than their informal listening comprehension scores at a 68% confidence interval (see Table 2.1). It is apparent that for all six students their severe difficulties with word recognition prevented them attaining their likely potential in reading comprehension.

To engage independently in usual everyday adult activities it is considered that an individual should be able to read automatically at a reading age of 12 age equivalent years as measured by the Neale Analysis of Reading Ability-Revised (Neale, 1988). All the students in this programme had a reading age of less than nine years. These students had experienced at least six or seven years of severe reading failure which were likely to have resulted in secondary deficits in language and dysfunctional attributional self-beliefs (Stanovich, 1986). As they were nearing the end of their schooling, they had few years left in which to receive effective remediation. Once they had left school these students were unlikely to receive further remediation unless they sought it of their own volition. After so many years of persistent failure few would be likely to do so. Yet, as a consequence of their literacy failure their life choices, both personal and vocational, were severely limited.

Previous Reading Instruction in School Programmes

All six of the chosen students had been taught to read by the method recommended by the New Zealand Ministry of Education (Department of Education, 1985). First, they were taught to use a repeated pattern of sampling the text for significant visual features, predicting words from meaning, confirming from meaning that they had predicted the correct word and self-correcting if they had miscued. Second, if an unfamiliar word was difficult to decipher, they were taught to read on to the end of a sentence or phrase and then to reread it in order to be able to make the most use of the contextual meaning and language clues.

All the students had some letter-sound knowledge, usually the consonants and most of the two letter initial consonant blends. All the students except David replaced at least some of the English short vowels with Maori vowels. They had all learned the Maori vowels as part of their school curriculum.

Their poor phonemic awareness led to even greater confusion. For example the students all had great difficulty with the short vowel for /a/ (at). The Maori vowel for the letter a is pronounced /ar/ (art). They easily confused this with the English indefinite article 'a' and the sounds for the letter a in words such as 'about' and alike'. To teach the correct short vowel sound for the letter a was indeed a very difficult task.

In 1999 Garth chose Japanese as a subject option. Japanese vowels appeared to be very similar to Maori vowels, which reinforced his previous learning at the expense of his knowledge of the English short vowels.

The Teaching Programme

Programmes to remediate word recognition for severely reading disabled students should be considered with due regard to the characteristics of the students who are the recipients. Most remedial programmes are developed for pupils in their early or middle years of primary schooling. Such programmes are likely to be unsuitable for adolescents both in their methods of knowledge delivery and their suitability of tasks, although the knowledge to be learned may be the same.

When programmes are designed for adolescents, consideration should be given to the comprehension ability of the students. Are they students with poor word recognition but good listening comprehension or are they students with poor word recognition and listening comprehension? Individuals from each group may have the same equivalent reading age but, as a result of their differing comprehension abilities, very different interest and entertainment requirements.

The year-long teaching programme was delivered in the last two terms of 1998 and the first two terms of 1999. Each student received one-on-one instruction in a half-hour lesson on Monday, Tuesday and Thursday each week. This gave a maximum of 48 hours of tuition. Attendance was lowered for all the students as a result of illness and school activities such as assemblies, form meetings, school examinations and the school drama production. The lessons took place in the school remedial reading room, a lively, informal room with couches and three workspaces with desks. It was richly endowed with a mixture of posters of pop stars and strategies for reading, and a very wide selection of interesting, intellectually stimulating books suitable for teenagers. There were frequently one or two other students, and sometimes senior students, receiving one-on-one tuition at the same time. Or sometimes there was buddy teaching where one student with better reading skills was helping another student with poorer skills. In this room reading disability was normal!

This teaching programme operated on the principle that only reading knowledge and strategies would be taught. It operated outside the school discipline system and every effort was made to eliminate any possible source of teacher-student conflict. The students were each provided with a notebook with the letter sounds, phonograms and strategies written in them. They were encouraged to bring these to each lesson but if they did not, a notebook with the letter-sound information and strategies, paper and

a pen were provided as was necessary. An exercise book diary was kept for every student in which the content of each lesson was recorded. Comments on the students' progress and any comments that had bearing on the students' self-beliefs and strategy use were also entered. The students used these exercise books to write in during the lesson if writing was helpful to their understanding. For example, they were often asked to write the 'sensible letter groups' they were dividing a word into.

The students were encouraged to read at home and to revise the letter information and strategies in their books. Although they were asked at every lesson what they had read and learned at home there were no penalties for not complying. They were required to come on time to their lessons. If they did not arrive they were collected from class.

The teaching and assessments followed a routine pattern in each half-hour lesson.

- At the beginning of every lesson each student was asked what independent reading they had engaged in since the last lesson.

- The fluency and strategy running record assessments were administered on Tuesdays and Thursdays respectively.

- A selection from the material taught previously was revised. Emphasis was placed on revising material that each student had difficulty mastering. During Phase I (see Table 2.2) only phonological processing skills and letter-sound knowledge was revised. During Phase II phonological processing skills, letter-sound knowledge and the strategies to apply the letter-sound knowledge were revised. In Phase III self-beliefs were added to the list for revision. In 1999, during the third and fourth terms of the programme, letter-sound knowledge and strategies were revised in their respective teaching weeks. As often as possible, but not so often as to become tedious to the student each student was encouraged to recount the self-beliefs that were helpful for good progress.

- On Mondays, the new material to be taught that week was introduced. This teaching was repeated on Tuesday and Thursday. In Phase I only phonological awareness and letter-sound knowledge were taught, in Phase II only strategies were taught and in Phase III only self-beliefs were taught. In 1999 in the third and fourth terms of the teaching programme the teaching of the letter-sound knowledge and strategies were alternated week by week.

- Finally each student read for between five to ten minutes from a book or other reading material they had chosen. During this reading each student was encouraged to maintain the self-beliefs and to use the skills, knowledge and strategies they had been taught in the programme.

The teaching programme (see Table 2.2) was designed and taught with an emphasis on the following four areas:

- Knowledge and Skills Base: To teach phonological processing skills, the alphabetic principle and a comprehensive knowledge of letter-sound associations.

- Strategies: To teach first, the appropriate cognitive strategies to apply their letter-sound knowledge; second, the metacognitive knowledge and monitoring skills that would enable the students to be consistent and persistent in applying effective strategies; and third, the monitoring skills to enable them to achieve sufficient flexibility to change strategies when the ones they were using proved to be ineffective.

- Causal Attributions and Self-Efficacy: To retrain the students' causal self-beliefs in order that they might hold positive beliefs that would empower their persistent, consistent and flexible use of strategies.

- Reading Full Text: In every lesson at least five minutes and sometimes up to 10 minutes was allowed for instructional (Clay, 1985) reading from a book chosen by the student. In addition, for two of the three lessons each week the students read school journal text (the New Zealand school journal is a magazine delivered to every school by the New Zealand Ministry of Education) as part of the assessment programme.

These pupils were older than those typically reported in the literature with few years of a school based remedial reading programme left. This programme was therefore written from the viewpoint that there was now some urgency if these pupils were to make progress towards adequate literacy skills. Further, it was considered that students at this level were capable of learning at a more advanced level than the younger children typically reported in the literature. Perhaps if the students perceived that the teacher expectations for their learning were in line with usual secondary school expectations they might believe that the teacher considered that they had sufficient ability to make progress.

Vygotsky's zone of proximal development offers a conceptual basis for an approach which can be used to encompass the effects of the mixed levels of learning, the inconsistent accuracy and the need for stimulating text of these adolescents. Vygotsky conceptualised an area of potential development for learning and problem solving that children could move into with the assistance of an adult or more capable peers, and which was more advanced than the level that they could operate at independently (Grigorenko, 1998).

Table 2.2. The teaching programme for students called Garth, Mark, John, Susan, Tom and David in this study.

DATE	PROGRAMME WEEKS	PROGRAMME CONTENT
1998 TEACHING PROGRAMME TERM I		
		PHASE I: LETTER-SOUND KNOWLEDGE
27.7 – 4.9	1 - 6	Phonemic Awareness • Initial blends (sit, spit, split) • End blends (bed, bend) Letter-Sound Associations • Consonants • Consonant beginning and end blends • Short Vowels • Long Vowels /a/ /o/ /e/ (ate, no, he) • Initial consonant blends Phonograms • Vowel consonant • Vowel consonant blend
3.9	6	Causal attributions started for Tom
		PHASE II: STRATEGIES

7.9 – 25.9	7 - 9	Strategies (**B C** WordS)
		• **Break** the word into sensible letter groups (the consonants or consonant blends and phonograms they were learning p-er-f-ec-tion, s-ub-scr-ip-tion).
		• Think of a word that fits the:
		  • Letter groups
		  • Meaning
		• **Sense** (does it make sense).
		• Be flexible. **Change** (if the correct text word is not found):
		  • The vowel sounds (interchange long and short vowels: con**f**usion, erosion, con**d**uctor)
		  • c and g (interchange hard (cat get0 and soft (cent, gent0 alternatives: intelli-/g/-ent, tropi-/c/-al); and
		  • Stress: **con**duct, con**duct; es**tablish, establish, estab**lish.**

		SEPTEMBER-OCTOBER SCHOOL HOLIDAYS
1998 TEACHING PROGRAMME TERM II		
12-10 – 16.10	10	Revise letter-sound knowledge and strategies
19.10 – 30.10	11 – 12	Strategies
		PHASE III: ATTRIBUTION RETRAINING
2.11 – 30.11	13 - 16	Attribution retraining *Ability* • Teacher belief in their ability to learn but they (the student) must believe.
		Effort • Teacher belief (but the student must believe also) that they would become good readers if they worked hard at: • Applying the strategies • Quickthinking to change the strategies if they were not working: • Reading independently
18.11	15	Tom finished for the year. Traveled to Australia to join his family.
30.11 - 11.12	No teaching	Last fortnight of the year. Students were engaged in chosen activities, many of which were off the school premises.
		CHRISTMAS VACATION
1999 TEACHING PROGRAMME TERM III		
	17 – 23	*Letter-sound knowledge and strategies taught on alternate weeks.*

Table continued on next page.

Table 2.2 continued from previous page.

		Letter sound knowledge • Revision of learning to date. Long vowel I **Strategies** Taught to change; • short and long vowels • hard and soft c and g • stress **Attributions** *taught throughout term.*
	19	All attributions for success and failure ascribed only to correct and incorrect strategy use. • Screened out all statements such as • you are tired; • you have a bad cold
1.3 15.3	21	You (the student) have the control. The students were taught the following two statements: • I read the word correctly because I applied the strategies correctly; and • I read the word incorrectly because I applied the strategies incorrectly or guessed. • What did you do to get this word right? • Why did you get this word wrong?

APRIL SCHOOL HOLIDAYS

1999 TEACHING PROGRAMME TERM IV

19.4 – 25.6	24 – 33	*Letter sound knowledge and strategies taught on alternate weeks* **Letter-sound knowledge** • Long Vowel /u/ (use) • Letter orthographies au, aw, oy; ou, ow; er, ir, ur **Strategies** • Word families • Taking of the prefix • Taking of the suffix • Taking of the prefix and the suffix • Two words together (daredevil) ***Attributions** taught throughout term*

Wood, Bruner and Ross (1976) developed an interactive, instructional teaching technique called scaffolding, through which appropriate guidance and support can be dispensed. With this technique disabled readers can be supported to read in Vygotsky's zone of proximal development.

In reading, to scaffold word recognition, a remedial teacher might use questions, modeling or prompts to support a student's attempts to decipher unfamiliar words or to redirect their attention to miscues. Where necessary, some guidance might be given about the meaning of a word, the contextual meaning or about the general comprehension of the passage as it is being read.

It is important that the reading disabled are able to read stimulating and challenging text. Yet they are likely to be continually frustrated by their inability to read unfamiliar words fluently and frustrated by continual interruptions with advice on the best way to attempt an unfamiliar word. To reduce this frustration, initially the remedial teacher may make continual judgements on when to scaffold the reader for deciphering a word and when to scaffold reading of the text by supplying a word freely. Slowly, as the reader becomes more proficient, most of the scaffolding is used to aid deciphering. Eventually even this scaffolding is rarely required and the reader is enabled to read most words in the text independently.

Wood et al. (1976) listed six functions in relation to scaffolding. Although the functions were conceptualised for the tutoring relationship between young children and a tutor, they seem to be equally as relevant to the tutoring relationships with adolescents. Their six functions are listed below and considered here in terms of this teaching programme:

- *Engaging the student's interest in the task*, in this case learning to decipher accurately: In terms of this reading programme this included; having the student think that reading was a necessary skill; finding texts that the students thought were worthwhile; having the students develop the positive self-beliefs necessary to learn and apply the programme taught knowledge and strategies to difficult text; and encouraging the student to believe that applying the strategies was an effective way to decipher unfamiliar words.

- *Simplifying the task by reducing the knowledge and strategies the student should use:* To decipher an unfamiliar word a less familiar letter group might be supplied to enable the student to sound the word through. Or, if the initial attempt was unsuccessful, the student might be guided in their choice of a replacement strategy.

- *Keeping the student focused*: If the student did not at first read the correct text word, the teacher might encourage further attempts with statements about how well the student was doing, correct the student's misconceptions and encourage the consideration of alternative strategies.

- *Accentuating the most relevant features of the task*: For example, helping the student to select the most appropriate strategies.

  Controlling frustration in very difficult passages: This is often achieved by freely supplying some words. The results will show that scaffolding Susan and Tom's reading initially enabled them to enjoy more difficult but interesting text from early in the programme. As

their self-beliefs changed they began to show more persistence in deciphering unfamiliar words.

- *Modelling*: this was a technique that was used consistently throughout the programme both to encourage and to instruct the students.

By supplying information, particularly information not yet learned, by aiding the students in their choice of letter-sounds and strategies, by encouraging the students to monitor their deciphering efforts, by modelling and by encouraging them to change their strategy use if their first efforts were unsuccessful, students were scaffolded in their initial attempts to read challenging text that they would not have been able to read independently.

Skill and Knowledge Base.

Phonological Awareness

All six students showed deficits in phonological processing in their initial assessment. For the first six weeks of the programme the students were taught to count the number of individual sounds in one-syllable words. They regarded using differently coloured stickers to denote the different sounds (Gillon & Dodd, 1997) as childish but were happy to count on their fingers. The only draw back with this method was that it was not possible for them to represent the same sound /i/ repeated in a word such as 'finish'.

The students were required to say the individual sounds in a word separately and to simultaneously mark the sounds off on their fingers (/b/-/e/-/n/-/d/). All six students rapidly understood the concept but found it difficult to distinguish the sounds in three letter initial consonant blends and consonant end blends. Progressions such as sit/spit/split and bed/bend were worked on extensively.

Letter-Sound Knowledge

Stanovich (1986; 1988) wrote that children with initial difficulties in hearing and isolating the phonemes in words fail to make the letter-sound associations necessary for progress in reading. Such children become reading disabled. The initial assessment of non-word reading and spelling showed that all six students did not know the letter sound associations necessary for good progress in reading. Letter-sound knowledge was taught in the first six weeks of the programme and in alternating weeks in the third and fourth terms in 1999 (see Figure 2.2). The families of vowel orthographies taught are given in Table 2.3.

During Phase I (see Table 2.2) the following principles of the alphabetic code were made explicit to the students.

Alphabetic principle

This was taught by having the students compose matrices (see Table 2.4) for each of the short vowels where the first letter was changed in the columns and the last letter was changed in the rows to make different words (Calfee & Associates, 1995). Changing the middle vowel sound was also taught.

Table 2.3. The vowel orthographies taught in the programme.

Short Vowel Sounds				
a	e	i	o	u
Long Vowel Sounds				
A	E	I	O	U
a-e	e-e	i-e	o-e	u-e
ai	ea	igh	oa	ue
	ie			ui
ay	ey		ow	
	--y	--y		
eigh				
R-Controlled Vowel Sounds				
ar	er	ir	or	ur
Further Vowel Sounds				
au	ew	oi	ou	oo
aw	eu	oy	ow	
	oo			

Additional Orthographies Taught Within the Programme Included:
tion, sion, ssion, le

Adapted with permission from a vowel chart compiled by Fay Coxon (personal communication, 1998).

The students were taught that English spelling is complicated by the fact that there are only 26 letters to represent the 46 sounds. It is therefore necessary to use two letters to represent some of the sounds. To add complications, occasionally three or more letters represent a sound and sometimes the same sound is written in more than one way (McGuiness, 1997).

The students usually knew how to spell the sounds /sh/, /ch/ and /th/ (she, chin, think). They were taught to recognise that in each case the two letters represented only one sound and the sounds /wh/ (wheel) and /ph/ (phone) were added to the list.

During the programme the students were taught to read the consonants and consonant blends. They were taught the vowel orthographies presented in Table 2.3. The vowel orthographies were taught as isolated letter groups and in word families (rain, pain, train, stain). To aid blending and to improve accuracy in recognising letter groups a comprehensive list of vowel-consonant phonograms (e.g. et, oud, ate, ight) and vowel-consonant-blend phonograms (e.g. est, ound) (Lovett et al., 1994; Wylie & Durell, 1970) was taught and extensively rehearsed for each vowel orthography. Revision of taught blends and phonograms was rotated on a regular basis until the end of the programme. The teaching was directed at having the students able to read any consonant blend and vowel-consonant or vowel-consonant-blend phonogram with automaticity.

Table 2.4. Matrix of seven short vowel phonogram collections.

p	pap	pat	pack	Pam	pan	pass
t	tap	tat	tack		tan	
c or (k)	cap	cat			can	
m	map	mat	Mac		man	mass
n	nap				nan	
f		fat			fan	
s	sap	sat	sack	sam		sass

(Calfee and associates, December 21, 1995)

Because it was considered that reading and spelling reinforce each other the students were routinely asked to spell the letter-sound associations and word families they were learning. But only reading progress was systematically monitored.

Blending Sounds

David had extreme difficulty blending sounds accurately to make a word and the other participants in the programme displayed varying degrees of difficulty. The blends and phonograms were written on cards and the students were required to practise accurately combining a chosen consonant blend with a list of phonograms (cl-og, cl-op, cl-om, cl-omp, cl-ong). When they became more skilled at this they were required to alternate between two chosen consonant blends as they progressed down the list of phonograms (cl-og, st-omp, cl-ong, st-ock). They were shown that although the results of this exercise did not always produce real words, the non-words produced were likely to be syllables within words. They came to see that reading the syllables in longer words was no more difficult than reading a series of one-syllable words.

The students in this study were nearing the completion of their schooling. It was important that they were taught enough information to be able to read words with the less familiar letter groups in them. It was also necessary that the value of learning the letter-sound information and the strategies to apply it was made transparent.

For these reasons the students were taken through the letter groups, with new groups being taught at regular intervals whether or not the previous groups were fully mastered. This approach was based on two beliefs. First, students learn some letter groups more readily than others and it was considered to be of value for the students to be familiar with as many groups as possible as quickly as possible. Secondly, only when the students had been taught all the groups and all the strategies could they begin to independently tackle most words. And only then could they develop an understanding of how the alphabetic principle works for most words. It was not until they had developed this perception that they could fully understand the value for them of using this approach to deciphering. Only when they had formed such an understanding were they likely to become fully motivated to use their knowledge and strategies consistently.

To teach the necessary letter information and strategies took the full year. During this time the use of scaffolding allowed these adolescents to read text that was more in keeping with their intellectual abilities and interests.

Cognitive Strategies and Metacognitive Monitoring

When the strategies were first introduced, in the second six weeks of the programme (see Figure 2.2), both the word 'strategy' and the word 'rule' were used. The students preferred the word rule, as they were familiar with this. Slowly the word 'rule' was replaced with the word 'strategy'. They were taught that a strategy was a way of doing things more easily. They were given examples and encouraged to think of useful strategies that they used in their everyday lives.

The cognitive strategies for deciphering unfamiliar words that were taught during the second six weeks and the third term of the programme were:

- Break the word into sensible letter-groups. The students were taught to break one syllable words and the syllables in multisyllabic words into the consonants or consonant blends and phonograms that they were being taught and that were listed in the notebook they had been supplied with (r-ent, p-er-f-ec-tion, s-ub-scr-ip-tion).

- Be flexible. Change one of the following sounds or the stress. When an initial attempt at breaking the word into its sensible letter groups was unsuccessful the students were taught to look at the word and see if changing one of the following might be helpful for deciphering the word. In this thesis the three following strategies are referred to as the 'change strategies'.

    - The vowel sounds. The students were taught to change from a long vowel to a short vowel sound or vice versa [conf/u/sion (use, us), er/o/sion (ode odd,)].

    - c and g. The students were taught to interchange the soft and hard sounds for c and g [intelli-/g/-ent (gent,get), tropi-/c/-al (cent, can)].

    - Stress. The students were taught to work through multisyllabic words putting the stress on each syllable in turn (**con**duct, con**duct; est**ablish, est**a**blish, est**a**b**lish**).

- Find a word that fits the sensible letter groups and the sense or meaning of the sentence.

The mnemonic **B C W**ord**S** was suggested to each student to help remember these strategies where:

- **B** stood for **Break** the words into sensible letter groups;
- **C** stood for the **Change** strategies;
- **W**ord**S** stood for find a **Word** that fits the sensible letter groups and the **Sense** of the sentence.

But only Susan thought the mnemonic was helpful and used it. It is perhaps obvious that students having difficulty with phonological processing would not be likely to find it helpful to use a mnemonic that involved using the initial sounds of words as a key.

In the fourth term a further series of strategies was introduced although, unfortunately, the time for teaching these strategies was restricted and there was little time for revision. To use these strategies the students were required to look closely at the structure of an unfamiliar word. The strategies were as follows:

- Many words are members of word families. If the word family the unfamiliar word belongs to is recognised then a known word from the word family can be remembered. The remembered word from the word family can then be used to help decipher the unfamiliar word.

- Some words have a prefix and/or suffix. If these are removed the root word can sometimes be recognised. The suffix and/or prefix can then be restored to the word and the unfamiliar word deciphered.

- Sometimes words were made of two simpler words. If the simpler words were recognised the unfamiliar word could be deciphered.

These strategies were constructed from the axioms that Gaskins et al. (1988) developed in their work at the Benchmark School. All strategies were modelled and practised on words in isolation. Lists of words with endings such as 'tion', sion, ssion and ly were used in order that the students might become familiar with these orthographies.

Proficient strategy use was modelled for the students. Modelling the identification of the sensible letter groups was often done in writing and the students were also required to write their efforts. This made explicit both how to apply the strategy and the students' levels of competency with its use. As the student became proficient the modeling was faded.

The students were regularly asked to recite the strategies they had learned so that they were not forgotten. They found them difficult to learn to the stage where they could verbalise them fluently. Because it was found that the briefer the wording of the strategies the better, "be flexible" was dropped from the 'Change' strategy. All of the students introduced some of their own wording, which was accepted as long as the meaning was maintained.

Two metacognitive monitoring strategies were introduced during the teaching of strategies in Phase II. They were

- Is this strategy working? and
- Which strategy would work better?

These were initially to be applied to the 'change' series of strategies (see Table 2.2). The students were encouraged to find where in the word they were having difficulty; to then rapidly run through the strategies in order to select whether to change the vowels, c and g or the stress. Garth termed this "quick-thinking" and this term was used with all the students.

Young children use overt private speech to plan and carry out challenging tasks. As they grow older children learn to think the words instead of pronouncing them. With this maturation, the verbalisation accompanying the planning and implementation of challenging tasks becomes internalised (Berk, 1999).

Teaching strategies is seen as a method of instructing student private speech for successful problem solving. However, it should be appreciated that this is a more structured and controlled approach than

the interaction between an adult and a child where a child is actively scaffolded to problem solve and in the process constructs unique private speech as a result of the demands of the problem (Berk, 1999). Therefore, when the students in this programme changed the wording of the taught strategies, and often quite substantially, the new wording was allowed to stand as long as the overall concept was maintained. These students usually maintained their own wording of the strategy throughout the programme.

Creating overt steps and strategies to aid problem solving is hypothesised to emphasise the salient features of the problem. It directs students through effective problem solving steps and thus gives them a sense of personal control over their learning. The perception that they have personal control is said to raise the student's self-efficacy. In turn, higher self-efficacy increases the students' motivation to engage a task (Schunk, 1986).

When strategies are learned that enable a student to solve problems in Mathematics or to better comprehend text, the strategies are used to organise the task. The strategies can be thought of before each step in the problem solving sequence is initiated. They do not interrupt each train of thought.

When strategies are used for word recognition during reading, the flow of words in the text and therefore the comprehension of the passage is interrupted. The student is required to interrupt the text message every time an unfamiliar word is encountered. This can be a frequent event for reading disabled students. When the student applies newly acquired strategies, the strategy must first be recalled and then applied. If the initial application of the strategies is unsuccessful, the student must then determine what the difficulty is in order to select a further strategy. Having finally determined the unfamiliar word, the student must then pick up the text message again. It is hardly surprising that many students find this process tedious and frustrating.

Schunk (1986) envisaged a system where the task is modelled with appropriate verbalisation. The children then perform the task using the taught overt verbalisation. When they become proficient on the task, they are taught to gradually fade the verbalisation to a whisper and finally to perform the task silently using covert verbalisation.

Causal Attribution Beliefs

This section of the teaching was introduced in the final four weeks of 1998, (see Table 2.2) after some letter-sound knowledge and some strategies to apply this knowledge had been taught. In this section the students were taught to believe they had the ability to use the knowledge and strategies

they were being taught and would make progress if they worked hard at using them. The order of teaching: first letter-sound knowledge, then the strategies to apply the knowledge and finally beliefs in their ability and the effectiveness of using the knowledge and strategies was thus determined. Unfortunately this was a time of interruptions in the school programme. The seniors finish school earlier than the juniors. As a consequence the year nine and year ten students become very unsettled, the six students in this programme included.

The positive self-beliefs necessary for good progress were introduced in conversations with the students. These occurred in every session during Phase III, the attribution retraining phase of the teaching programme. In the initial sessions I (the teacher) did much of the talking. The students were encouraged to verbalise the beliefs that were introduced and could do so by the end of Phase III. In terms three and four the students were encouraged to verbalise what their beliefs should be on a regular basis, perhaps once or twice a fortnight. Throughout this programme conversations were always natural. Predetermined attribution statements were not used as it was believed that such statements were likely to appear insincere to the students.

- Ability

In week 13 the students were told that I (the teacher) believed they could learn to read. They were shown the level six passages in the Neale and told that I believed they could learn to read these passages easily. They were further told that it was not enough that I believed. They must believe. They were then shown the improvement in their reading scores. This improvement was emphasised. Each student read *Jake O'Shaunesey* by Stephen Cosgrove (1975) aloud. This book tells the story of a green Irish seagull who did not learn to fly until he believed that he could. If time was short in the lesson the student and I (the teacher) read turn about or I read the last few pages to the student in order to finish the story. A short discussion followed on the implications of the story. All the students had been party to discussions on this theme many times before.

- Effort

They were assured that I knew that they would become good readers if they:

- Were consistent and persistent in their use of effort to apply the strategies they were being taught;
- monitored their efforts, were flexible and changed their strategy use (by using the 'change' strategies) where appropriate; and
- were consistent and persistent with their independent reading (see Table 2.2).

In discussion an area where they had personal success was established. They were encouraged to think how they felt when they worked hard or used a lot of energy to achieve success in this area. They were encouraged to think how working hard at using the strategies and quick thinking in using the strategies might feel.

They were assured that my believing that they could be good readers if they worked hard with lots of energy at using the strategies was not enough. They must believe. They were told that this applied to reading on their own also.

They were frequently asked what they must believe to keep improving their reading in order to ensure they remembered these beliefs.

From week 19 care was taken not to make statements that would only allow the students to attribute lack of success to incorrect strategy use. Examples of statements that were not used again included, "You are tired today", and "You have a bad cold".

Because the students found affirmation of their ability and being told that they would make progress if they worked hard at using the strategies stale and tedious the attribution statements were changed in week 21 of the programme. The programme intentions were discussed with each student. They were told why there was such an emphasis on believing in their ability, in applying the strategies with effort. They were asked about their beliefs in the effectiveness of the knowledge and strategies they were being taught as it was important that these were positive. A metacognitive monitoring emphasis was given to them. In conversational language the students were told that:

- They should think that they were always in control (a statement they all responded very positively to). It was what they did that determined whether they read a word correctly or not.
- They read the difficult word correctly when they used the strategies correctly.
- They did not read the difficult word correctly when they guessed or did not use the strategies correctly.

Each student was told that they would be supported to think in this way. To help them, I was going to be telling them the same thing repeatedly. At the same time I would be helping them to understand how they should change their strategy use to read the word correctly (see Table 2.2, Term III).

Teacher statements about improving reading ability were given in a context where the students could perceive their gains for themselves. In addition, the students were helped to perceive the gains they

made, not only in their reading achievement scores but also when they were reading their chosen books. They were helped to perceive that their reading was becoming more fluent, that they were able to read more words as they first encountered them, that less help was being given and that they were reading longer passages in each session.

To summarise, the programme emphasised explicit recognition of their reading gains, the control that they could establish over their progress and that this control could be achieved by working at correctly applying the knowledge and strategies taught in the programme. They were repeatedly questioned during the course of the programme about the beliefs they needed to hold to bring success. They could thus verbalise these beliefs. All six students responded well to this approach and most particularly to being encouraged to believe that they had control over their learning.

Reading Full Text

Each student read a book or other text that they had chosen for five to ten minutes a day. The students were encouraged to tackle difficult text. While they were reading they were encouraged to use the letter-sound information and the strategies to apply this information that they had been taught in the programme. They were encouraged to use the strategies for using contextual meaning that they had been taught in their previous reading programmes. Initially the students were scaffolded in their attempts at deciphering unfamiliar words but the scaffolding was faded as the students became more proficient at using the knowledge and strategies they had been taught. Full text uses natural language rather than language that is restricted to the vocabulary and letter-sound knowledge of the learning reader. Reading full text provided experience in reading text with a richer vocabulary and more complex sentence structures. Reading such text provided each student with practise at generalising their growing knowledge and strategies for word recognition to unfamiliar words.

Intrinsic and Extrinsic Motivation

The only obvious external extrinsic motivational factors (Ryan & Deci, 2000) in the programme were the teacher expectations for progress in their reading achievement scores, expectations for greater accuracy in their two running record weekly scores and a teacher expectation that they learn the knowledge and strategies taught and work at applying these.

Effort was made to interact informally with the students. There were conversations about their hobbies, their weekend activities and their holidays. They were helped to achieve goals such as learning the road code in the course of the lessons. Every effort was made to help them to be productively calm and to achieve an environment of trust. They were told that school difficulties could be left at the door. Sometimes time was spent unravelling difficulties and help sought from the school counsellors or other school services. Humour was used to diffuse difficult behaviour and emotional tension. For example, sometimes David was especially tense. If one of the other remedial teachers in the room was free, a joke session would be set up that he could join in as he unwound. In Ryan and Deci's (2000) terms every endeavour was made to have the students feel they were valued as individuals; to establish a feeling of relatedness.

Scaffolding was used to help the students to maintain very positive self-efficacy as they read difficult text. By these means every endeavour was made to increase the internalisation of the student's extrinsic motivation (Ryan & Deci, 2000).

Selecting Text to Read

In the remedial lessons the students were helped to find texts that were interesting and stimulating; texts that would have enough interest value that each student would want to be able to read them independently; texts that were intrinsically motivating for the students (Ryan & Deci, 2000). Each student spent time choosing books from the wide selection provided in the reading room. Students were also encouraged to bring books they were interested in from the school library or from home.

If a task is intrinsically motivating it is said to engender feelings of autonomy, curiosity and a desire for challenge (Ryan & Deci, 2000). Finding text that might be intrinsically motivating for the students was a very important consideration in the reading programme. Books have to compete with films, television and computer games, all of which specialise in modern, lively and stimulating presentations. To gain the attention of an adolescent reader, and particularly a failing adolescent reader, a book must be stimulating.

Within the instructional setting of the programme lessons, all the students except David were encouraged to read books containing several chapters that were difficult for them to decipher. At the beginning of the programme all the students except Susan (who selected such text later in the programme) chose as easy-to-read passages, texts that lay within Clay's (1985) hard text category. They made the self-efficacy judgements that enabled them to tackle such text. In addition, their

reading ages did not define the usual characteristics of a comparable beginning reader at the same level. Rather it was the result of a combination of their lack of ability to apply the alphabetic principle combined with their difficulties with accuracy and automaticity for words they frequently met and had often previously read correctly. This approach was unsuitable for David as will be explained later.

Text that held intellectual appeal was selected carefully. These readers were very dependent on contextual and overall meaning. Text was chosen where the storyline or information in the text was factual and easily visualised, where there was little inferential information, and where the sentence structure was not too complex. *Bravo Two Zero* by Andy McNab (1993), for example, had very difficult word recognition but each Chapter consisted of a series of straightforward, easily visualised incidents, and each incident was like a short story within the Chapter. Garth brought along *The Horse Whisperer* by Nicholas Evans (1995). Although this book was more difficult to comprehend, he had seen the film. This gave him an understanding of the text.

Summary

This teaching programme was designed first to provide an effective remedial teaching programme for students with very limited word recognition skills and second to research the complex relationships between the students' letter-sound knowledge, the strategies they used to apply their knowledge base; their attributional beliefs about their ability and the effectiveness of the strategies they were being taught and finally the effort the students made to apply the strategies.

In order to achieve these objectives the teaching programme taught phonological processing, letter-sound knowledge, cognitive and metacognitive strategies, and positive attributional beliefs. It was designed specifically to be sympathetic to the needs of adolescent students with extremely low deciphering skills and listening comprehension scores that were above the mean for their age. Every endeavour was made to encourage the development of intrinsic and internal, extrinsic motivation to read.

CHAPTER 3

Assessment Programme

The interplay between academic self-beliefs, self-efficacy, strategy use and consequent reading achievement for reading disabled students such as those that participated in this study are complex. In addition, there are many other factors both environmental and internal to the students that are likely to influence both this interplay and achievement. If the influence of these factors is not detected erroneous conclusions could easily be drawn. Therefore, in this study account was taken of as many of the factors as possible that were likely to have had an influence on the students' reading achievement in the programme.

Information was collected about factors such as the students' language ability, reading history and home background. This background information was in addition to the information that was directly related to reading achievement, strategy use and academic self-beliefs about reading and self-efficacy. The reading achievement, strategy use, academic self-belief information was assessed in as many different ways as possible to triangulate the results. A summary of the assessment programme is given in Table 3.1. To avoid repetition some results from the study are anticipated in this section, in order to comprehensively discuss the characteristics of the different reading achievement assessments.

Assessment Setting

The reading room where the programme lessons were held was a lively and sometimes noisy environment. For this reason the assessments held at regular intervals throughout the programme were administered in a small room having no other occupants.

The students accepted the high level of assessment very well. It was explained to them that so much assessment was not usual but necessary for this study. At intervals throughout the programme, a small chocolate bar accompanied my thanks for their patience.

Selecting the Students

The school used scores from the Progressive Achievement Tests along with Burt Scores in order to select suitable participants for the study. The Progressive Achievement Tests are both group administered, multichoice tests with alternate forms (Form A and Form B), which have been standardised specifically for use in New Zealand schools. Form B was used in 1998.

The Progressive Achievement Test of Reading Comprehension

This reading comprehension test is designed to measure a student's factual and inferential comprehension of prose material. It is written to reflect the "current aims and present practices of New Zealand teachers" (Reid & Elley, 1991, p. 3). The students selected for this study were in Year Nine and Year Ten in 1998. They completed either Part Seven alternate Form B or Part Eight alternate Form B respectively. The internal consistency reliability coefficients (KR20), which are conservative estimates of reliability, are high for these levels at 0.95 and 0.92 respectively.

The Progressive Achievement Test of Listening Comprehension

This listening comprehension test is designed to assess student achievement levels in comprehending and making inferences about extended passages of verbal text that are orally presented. The Part Seven and Part Eight internal consistency reliability coefficients (KR20) for Form B provide a satisfactory conservative estimate of reliability with coefficients of 0.85 and 0.86 respectively (Reid, Johnstone, & Elley, 1994).

Reading Achievement in Word Recognition

To measure achievement in word recognition two standardised tests, the Burt Word Reading Test-New Zealand Revision (Gilmore, Croft, & Reid, 1981) and the Neale Analysis of Reading Ability-Revised (Neale, 1988) were administered. In addition, two weekly series of running records were given. The first, the fluency running record series was timed the second, the strategy running record series was used to assess the students' self-efficacy judgements about their ability to read each weekly passage, the strategies the students used for word recognition and their academic self-beliefs about their strategy use.

Table 3.1 The assessment programme.

DATE	PROGRAMME WEEKS	PROGRAMME TEACHING AND ASSESSMENT
		ASSESSMENTS FOR SELECTION OF STUDENTS FOR THE PROGRAMME School administered Progressive Achievement Test of Listening Comprehension School administered Progressive Achievement Test of Reading Comprehension Neale Reading Accuracy, Reading Comprehension and informal listening comprehension
15-26 JUNE		*INITIAL ASSESSMENT* Burt (word recognition) PPVT (vocabulary) CELF III (expressive and receptive language) QUIL (phonological processing) QUIL nonword reading and spelling (letter-sound knowledge) Strategy use (questionnaire) Self-beliefs about effort, guessing and strategy effectiveness (self-ratings) Self-efficacy (self-rating) Self –beliefs about reading ability (self-rating)
1998 TEACHING PROGRAMME TERM I		
27.7 – 4.9	1 - 6	**PHASE I: LETTER-SOUND KNOWLEDGE**
	Throughout Programme	Weekly fluency running record (% reading accuracy and reading speed)
	Throughout Programme	Weekly strategy running record (% reading accuracy, strategy use and self-belief questionnaire about self-efficacy, effort, guessing and strategy effectiveness)
	Throughout Programme	Teacher observations
	Throughout Programme	Informal conversations
24.8 – 4.9	5 - 6	QUIL (phonological processing) QUIL (non-word reading and spelling: letter-sound knowledge) Neale (word recognition) Burt (word recognition) Strategies (questionnaire)
7.9 – 25.9	7 - 9	**PHASE II: STRATEGIES** Strategies Revision of taught letter-sound associations
SEPTEMBER–OCTOBER SCHOOL HOLIDAYS		Parent Interviews
1998 TEACHING PROGRAMME TERM II		
12.10 - 16.10	10	Revise letter-sound knowledge and strategies
19.10 – 30.10	11 – 12	Strategies
14.10 – 3 .11	10 - 13	QUIL (non-word reading and spelling: letter-sound knowledge) Neale (word recognition) Burt (word recognition) Strategies (questionnaire) Reading self-beliefs about ability (self-rating questionnaire)
2.11 – 30.11	13 - 16	**PHASE III: ATTRIBUTION RETRAINING** Revision of taught letter-sound associations
23.11 –27 11	16	QUIL (phonological processing) QUIL (non-word reading and spelling: letter-sound knowledge)

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		Neale (word recognition) Burt (word recognition) Strategies (questionnaire) Reading self-beliefs about ability (Self-rating questionnaire)
CHRISTMAS VACATION		
1999 TEACHING PROGRAMME TERM III		
15.2 – 26.2		QUIL (non-word reading and spelling: letter-sound knowledge) Neale (word recognition) Burt (word recognition) Strategies (questionnaire) Reading self-beliefs about ability (self-rating questionnaire)
15.2 - 2.4	17 – 23	Letter-sound knowledge and strategies taught on alternate weeks Attribution retraining continuous throughout the term
APRIL SCHOOL HOLIDAYS		
1999 TEACHING PROGRAMME TERM IV		
19.4 – 23.4	24	QUIL (non-word reading and spelling: Letter-sound knowledge) Neale (word recognition) Burt (word recognition) Strategies (questionnaire) Reading self-beliefs about ability (Self-rating questionnaire)
19.4 – 25.6	24 - 33	Letter-sound knowledge and strategies taught on alternate weeks Attribution retraining continuous throughout the term
TEACHING PROGRAMME FINISHES		
JUNE – JULY SCHOOL HOLIDAYS		
12.7 – 27.7	34 - 35	Neale (word recognition) Burt (word recognition) PPVT (vocabulary) CELF III (expressive and receptive language) QUIL (phonological processing) QUIL nonword reading and spelling (letter-sound knowledge) Strategy use (questionnaire) Self-beliefs about effort, guessing and strategy effectiveness (Self-ratings) Self-efficacy (self-rating questionnaire) Reading self-belief about ability (Self-rating questionnaire)
OCTOBER HOLIDAYS		
18.10 – 22.10	46	Neale (word recognition) Burt (word recognition) QUIL nonword reading and spelling (letter-sound knowledge) Strategy use (questionnaire) Self-beliefs about effort guessing and strategy effectiveness (self-rating questionnaire) Self-efficacy (self-rating questionnaire) Reading self-beliefs about ability (self-rating questionnaire)

Burt Word Reading Test

This is an individually administered test that has been standardised for New Zealand students (Gilmore et al., 1981). It measures a student's ability to recognise words in isolation, that is, with no support from semantic or syntactic cues.

The high test-retest reliability coefficients ranged from 0.95 to 0.99. Reliability coefficients for the internal consistency (KR20) were similarly high with values of 0.96 and 0.97.

The test words are a graded series. With increasing difficulty level, the size of the print decreases, the number of syllables in the words increases and letter groups that are less frequently encountered in text, and/or have more letters, are included.

Neale Analysis of Reading Ability-Revised

This test is an individually administered assessment that has been standardised for Australian students (Neale, 1988). For this study, the restandardisation dating from 1988 was used. This assessment has alternate Forms 1 and 2 and a further series of graded passages of equivalent reading difficulty in the Diagnostic Tutor series.

For this assessment, Neale (1988) wrote a series of carefully graded passages with decreasing print size, increasing length and increasingly difficult vocabulary and syntax. The vocabulary was checked against data on word frequency to ensure that it was still in current use. The reading difficulty level of the words was checked against the vocabulary in basic schemes of reading. Several more difficult words were included in each passage to discriminate the better readers. During the assessment, the average or failing reader is supported by prompts for the more difficult words.

As with the Burt, the vocabulary is graded in terms of an increasing number of syllables along with an increasing number of less frequently and/or more difficult letter groups. The sentence examples show that the sentences are tightly packed with several pieces of information. There are relatively few one-syllable high frequency words (in, the, was, when).

When reading these Neale passages for the most part the story line meaning rather than a combination of story line and contextual meaning is the only meaning cue available to the reader. With few contextual meaning cues and few high frequency one syllable words the reader is required to continuously use their letter-sound and sounding strategy knowledge to decipher words that cannot be recognised automatically. These texts appear to be constructed to measure the student's

achievement in the use of letter-sound knowledge, the information that is to be taught in this reading programme.

The parallel forms reliability coefficients for accuracy are very high (for all groups Form 2/ Tutor: and Form 2/Form 1 are both 0.98; individual age groups range from 0.93 - 0.97 and 0.91 - 0.97 respectively). For reading rate the values are also high (for all groups Form 2/Tutor and Form2/Form1 are 0.88 and 0.89 respectively; individual age groups range between 0.73 - 0.95 and 0.71 - 0.94 respectively).

The internal consistency reliability coefficients (KR20) for Form 1 Accuracy range from 0.75 to 0.83 with an overall value of 0.81. For Form 2 the range is from 0.71 to 0.85 with an overall value of 0.83. Neale (1988) comments that the levels of reliability at some age levels are lower than is usual for an objective reading test. She suggests that this may be the result of "idiosyncratic prompting and scoring procedures for obtaining Reading Accuracy scores, which do not respond well to conventional internal consistency analysis" (p. 49).

As this assessment was used at regular intervals, Form 1 and Form 2 were alternated. By the end of the programme each series had been repeated four times. To allow the students to maintain their comprehension of the passage as they read, miscues were corrected and the assessor supplied words, after four to six seconds, if the reader made no response. As the students may have remembered at least some of the story line it is likely that scores may have been slightly inflated by practice effects. However, assessment results were usually similar to those obtained using the Burt which has very high test-retest reliability so the effect appears not to have been large.

Measurement error was evident in assessing the speed of reading. The Neale manual instructions for standardised administration say that words should be supplied after four to six seconds if the student is unable to proceed. However, sometimes the student would begin to decipher a word correctly as the six seconds were elapsing. Although every endeavour was made to be consistent in the timing for supplying words as the student read, variations in this timing (usually because the time was extended) were a source of error in the speed of reading measurements. Other factors which affected the variability of reading speed included the very high rate of self-correction that the students in this study displayed, the number of unfamiliar and multisyllabic words and the influence the difficulty level of the storyline had on the student's use of the meaning cue. The graphs of reading speed should therefore be regarded as a very broad measure. However, they do give an indication of how poor the reading fluency was for these students.

The Fluency and Strategy Running Record Series

Each student's reading achievement and reading behaviours were assessed each week using running records. To take a running record of a student's reading the student is asked to read at least 100 words aloud from a text. All the miscues and mispronunciations are recorded. The ratio of miscues to read words is calculated and presented as a percentage accuracy score. An analysis of the miscues gives the reading behaviours of the learning reader.

In order to assess the students' word recognition achievement, strategy use and academic self-beliefs about reading on a weekly basis, a large collection of unseen graded text was required. Unseen New Zealand school journal text was therefore used for the two running record series. The New Zealand school journal is distributed free to all New Zealand schools by the New Zealand Ministry of Education. It caters for four age groups. Part 4, the level used in this study, contains stories and articles of differing reading levels which are appropriate to the interests and experiences of 11-13 year olds.

The students read for four to five minutes once a week for each running record series. The fluency running record series used text that lay in Clay's easy text category, which the student could read with 95-100% accuracy. The strategy running record series used text that lay in Clay's instructional text category, which the student could read with 90-94% accuracy.

To determine the difficulty levels of the journals each student was asked to read three 100-word samples of text from consecutive age equivalent levels of journal text. The samples were scored as the student read and the level of journal text suitable for each running record series was selected for each student. Unfortunately, scoring as the student read instead of transcribing a taped reading proved to be an inaccurate method to determine reading accuracy. Therefore, the levels of journal chosen for these running record series were more difficult than was intended.

For the fluency running record series words were supplied where necessary in accordance with the instructions given in the Neale. The same comments that were made for the Neale are applicable to the reading speed results for this series.

Reading Characteristics of New Zealand School Journal Text.

The results reported in this study for the Neale and Burt assessments will be seen to be similar. These results will be seen to differ markedly from those obtained for the fluency and strategy running records. The following discussion gives reasons for these differences.

The Elley noun frequency method (Elley & Croft, 1989) was used to grade New Zealand school journal text. The levels suggested are for guided reading (or directed silent reading) (Ministry of Education, 1998). That is, the recommended levels are suggested as comprehension levels rather than word recognition levels. Although it is unstated, the inference is that the students have achieved proficiency at word recognition.

Elley and Croft (1989) considered three factors in the rationale for their readability assessment. The first was the strong relationship between the frequency with which a word is encountered in reading and its meaningfulness for the reader. Therefore some index of the exposure the reader had had to different words should be considered. Second, vocabulary load appeared to be a consistent indicator of the readability of a passage. Elley and Croft therefore considered that a scale for vocabulary load, which took account of the frequency with which the words occurred, should be an effective measure. Finally, the difficulty level of the nouns appeared to have the greatest influence on the readability of a passage. For these reasons an assessment of text difficulty based on the frequency with which readers of different ages could have been expected to encounter the nouns contained in the text was used.

The list that was developed was based on the frequency with which nouns were used in New Zealand children's free writing. This list had been developed by Croft (1983) from a national sample of primary school pupils. The equivalent reading age levels for school journal text is based on the meaningfulness of the nouns in the passage and the resultant difficulty students might have in comprehending the text rather than word recognition factors assessed by the Burt and the Neale.

The language of these journal passages differs from that of the Neale in three respects. First, although the vocabulary shows increasing word recognition difficulty through the levels, there is not the carefully graded increase that is characteristic of the Neale passages. Second, the difficult vocabulary in the sentences is not presented with the same regularity as in the Neale. The more difficult words to recognise are often separated by many one-syllable words. Third, contextual meaning cues along with the story line are available to aid with word recognition.

The subject matter of the text in the Neale passages, and particularly the higher level texts, is dense and the number of multisyllabic words is high in comparison to journal text. It can therefore be expected that the reading speed scores for reading the Neale will be depressed when compared with the scores for reading journal text.

It will be seen in the case studies following that the many one-syllable words and the richer contextual meaning of the journal text meant that the students made continual use of the initial-letter strategy, for a substantial proportion (at least one third) of their deciphering. When they used this strategy the students continued to be inconsistent with their accuracy. It will be reported that the week to week variance in the students' percentage accuracy scores was much higher than the variance resulting from the programme teaching with the exceptions of David's 1998, Garth and Mark's 1999 strategy series scores and Tom's 1999 fluency series scores.

That is, for most of the two running record series any progress recorded was insignificant when considered in relation to the week-to-week variability in the scores. The failure of journal text to consistently direct the students' attention to the sounding strategy, with the rigour of the Neale text, provides an explanation for the failure of these running record series to record the students' progress in word recognition as the Burt and Neale scores did.

The Neale and Burt scores provide a record of each student's developing ability in word recognition using letter-sound information. This is the skill they require when they are reading to learn unfamiliar information, a skill they require in the subject based secondary school curricula and for future employment. The two journal running record series provided a record of the students' lack of accuracy and automaticity in recognising letter-sound information, their reading fluency and their strategy use when these students resorted to using the initial letter/similar appearance/contextual meaning combination of cues for word recognition.

When assessing students with the severe reading disability that the students in this study exhibited, both types of assessment should be used to gain a full picture of their progress. In addition, a full strategy analysis of their reading of text with the characteristics of journal text (such as will be reported in this study) should be carried out to discover their strategy use and changes in their reading behaviours through the course of the remedial programme

Scoring Accuracy

In this study results for word recognition and for the miscue analysis were based on the number of miscues and self-corrections. To maintain marking accuracy all the results were scored from audio tape recordings of the student reading aloud. This was necessary because when students are reading fairly rapidly, frequently rereading sections and making more complex miscues it is very unlikely that a teacher or researcher could accurately record every miscue and self-correction (Goodman, Watson, & Burke, 1987).

The disparity between the percentage accuracies scored during the lesson and the percentage accuracies scored from the audiotapes are shown for Garth and Mark in Figures 3.1 and 3.2. Of interest is the fact that the errors in scoring are consistently higher for Garth than they are for Mark. Scanning through the miscues reveals that Garth frequently made two or more miscues in a phrase in order to create agreement in the sense and syntax (of a mountain/for a moment). He would then give a second and sometimes a third version of the phrase in his effort to self-correct these miscues (a bit of/a bite like/ a bit like). Garth's miscues were complex and difficult to score accurately as he was reading. In contrast, Mark's miscues were usually single words (grammits/garments). Hence the difference in the scoring accuracy.

The audiotape transcripts of the miscues were very accurate (see Table 3.2). A check marker was employed to rescore a randomly selected ten-percent of the assessment running records for each student. Only eight marking errors were detected in the thirty-three records that were checked. All eight errors were errors in recording the self-correction of a miscue and not the miscue itself. Usually the self-correction had been omitted but on one occasion a non-existent self-correction was scored.

Scoring audio tape recordings of students' running records provided an acceptable level of accuracy for scoring miscues especially, but also for scoring self-corrections.

The Interview Programme

In order to gain as much background information as possible which might have been of importance when considering their reading achievement, the students were interviewed twice before the teaching programme (Initial Interview I and Initial Interview II, see Appendices A and B respectively). These interviews were to give a comprehensive range of information that might have influenced the reading achievements and behaviours of the students in the programme. Only data that were relevant to the results of each case study has been reported in this study.

Initial Interview I concerned the students' motivation to read, their academic reading self-concept and their expectancy for success. Initial Interview II covered the students' strategy use, their metacognitive monitoring of their cognitive strategy use, self-efficacy, academic self-beliefs about their reading and any goal setting they had engaged in.

During the 1998 September-October school holidays the parents were interviewed (see Appendix C).This interview provided background information about the students' reading and learning

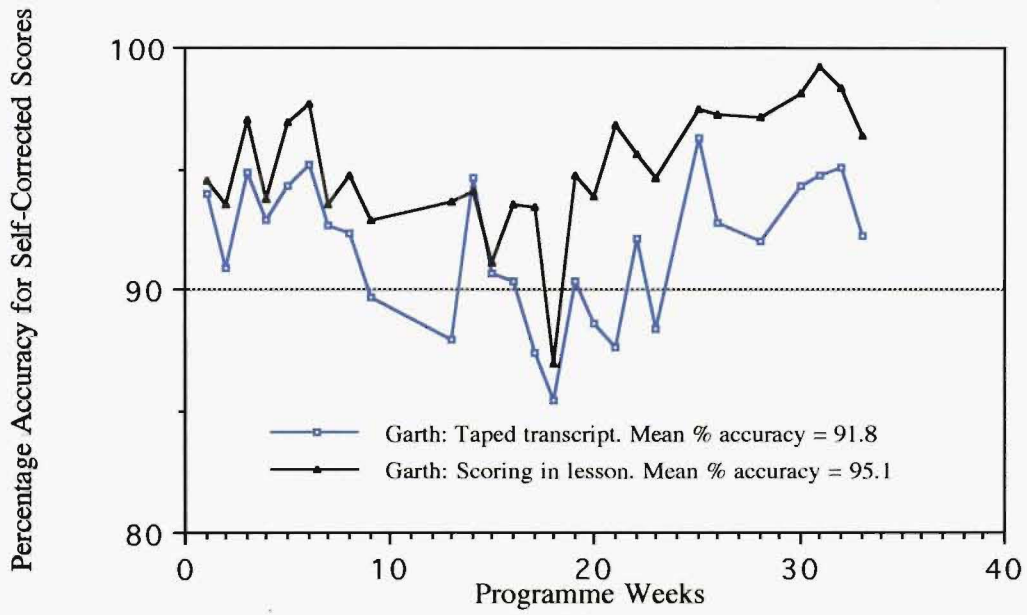

Figure 3.1. Comparison between Garth's percentage accuracy scores from the taped transcripts and those scored in the lesson.

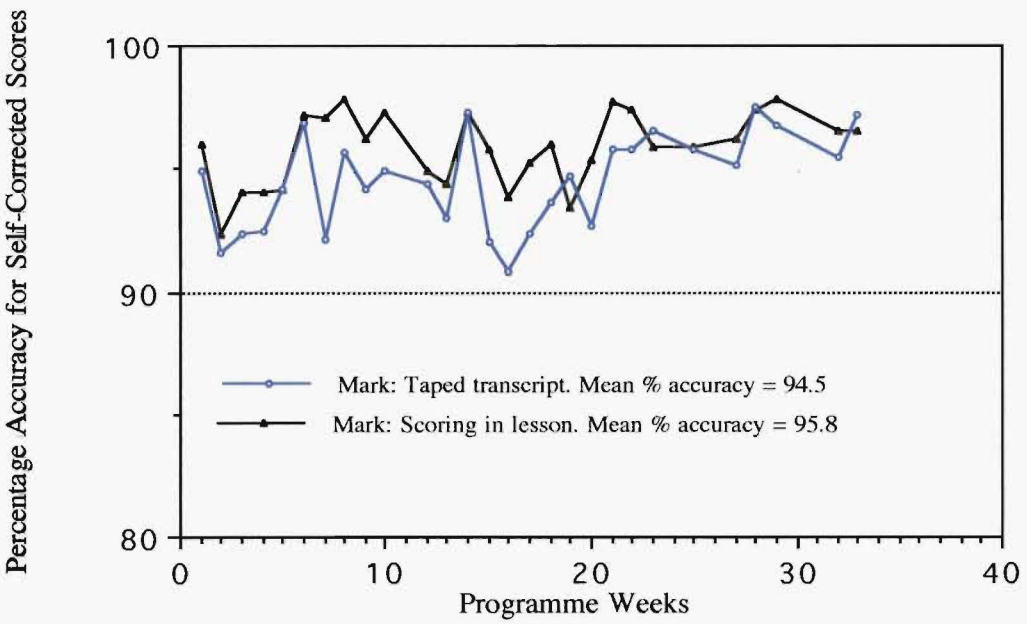

Figure 3.2. Comparison between Mark's percentage accuracy scores from the taped transcripts and those scored in the lesson.

histories and about the families' attitudes to the importance of reading. Again, only information that was relevant to the results has been reported in each case study.

Table 3.2. Miscue and self-correction marking errors found by check marking the strategy running record audiotapes.

Programme Weeks	Garth Miscues/sc	Mark Miscues/sc	John Miscues/sc	Susan Miscues/sc	Tom Miscues/sc	David Miscues/sc
1				0/0		
2		0/1				
3			0/0		0/0	
4	0/1			0/0		
5					0/0	
6	0/0			0/0		
7						
8			0/0			
9	0/3					
10						0/0
11						
12						
13		0/0				
14		0/0			0/0	0/0
15			0/1		0/0	0/0
16	0/0	0/0				
17						
18						
19						
20		0/0				
21						
22					0/0	
23						0/0
24						
25	0/0	0/0				
26	0/0			0/0		
27						
28						0/0
29						
30						0/0
31						0/0
32				0/0		
33					0/2	

Note: Miscues/sc = number of marking errors for the miscues/number of marking errors for the self-corrections.

Assessing Strategy Use for Word Recognition

Each student's strategy use was determined in the following four ways.

Miscue Analysis

The miscues were listed for each weekly running record and categorised by the cognitive strategy the student had used to attempt to decipher the word. The general categories used are described as follows:

- Sounding (Sd): miscues were sounded through;
- Initial-Letter (IL): had the same initial-letter as the text word;.
- Similar Word (Sm): did not have the same initial-letter but were of a similar appearance to the text word;
- Meaning (Mn): did not look similar to the text word but had an appropriate meaning for the context, although not necessarily for the meaning of the complete passage or the author's meaning; and.
- Inventing (In): real word miscues that did not have agreement for either letter information or the meaning within their context.

Some students had further individual strategies. These are described in their case studies. Examples of miscues that were not reported in this analysis included words that were added or omitted and miscued word endings such as ed, ing and s.

From this miscue information an analysis of the strategy use for each student was made. This identified the:

- proportional use of each strategy expressed as a percentage of the total strategy use;
- self-correction behaviour for each strategy expressed as a percentage of the total miscues for that strategy;
- characteristics for the strategies that were most frequently used, that is, were the miscues real words, words of similar appearance to the text word, or words with contextual meaning; and
- strategy use in relation to the number of syllables in the miscue.

Care must be taken in interpreting this analysis as such a classification of miscues necessarily results in a very small number of words in each category (see Table 4.3). To achieve a larger number of miscues, either the original text would have had to be completely inappropriate with respect to reading difficulty level, or each running record would have had to be several hundred words in length and take most of the teaching time available in each lesson.

Questionnaires

In Initial Interview II the students were asked to rate passages in the Neale Diagnostic Tutor (see question 4, Appendix B; and Appendix D) as either easy or hard to read. (The Neale Diagnostic Tutor is a series of graded passages of equivalent difficulty levels to the graded passages in the Form I and Form II assessments.) To determine their strategy use the students were asked to choose several words from the 'hard' passage that they considered would be difficult to decipher. They were then lead through a series of questions (see questions 6–10) about the strategies they would use in order to decipher these words.

Questions 6–16 and Question 18 from Initial Interview II were readministered to determine strategy use in the assessments after Phase I, II and III of the teaching programme in 1998. In 1999 they were administered at the beginning of term III and term IV of the teaching programme (see Table 3.1).

In the assessments at the end of the programme and a term after the end of the programme the students were asked:

- "What are the strategies you have learned?"
- "What strategies would you use to work out these unfamiliar words?" (They had selected some unfamiliar words from a 'hard' passage in the Neale Diagnostic Tutor.)
- "What other strategies do you use sometimes?"

These questions did not prompt the students' responses and were used to try and ascertain both what the student could recall of the programme teaching and the reading behaviours they were actively using to decipher difficult words.

Teacher - Student Discussions

In the Teaching Setting

In addition to the more formal interviews, discussions were initiated with the students about their strategy use after their strategy running record assessment. Judgement was used as to how often such discussions took place so that the students did not become bored with the repetition and remained responsive with their answers. Information from these discussions was recorded on the self-belief and strategy questionnaire that was filled in each week (see Appendix E).

Information from discussions about their strategy use and any metacognitive monitoring behaviours, which arose out of their reading from chosen text, were recorded in the students' diaries.

In Informal Settings

Sometimes it was necessary to collect a student from class. Informal conversations arose as the student and I walked from the classroom back to the reading room. These infrequent chance conversations were the time when the students often offered their most insightful comments. These comments were recorded in the students' diaries.

Teacher Observations

Any teacher observations that might have a bearing on the students' strategy use were recorded in their diaries.

When the results were analysed two sets of data were available to compare. The first set was the students' perceptions about their strategy use, acquired from the administration of the interviews and from discussions. The second set was a record of the students' reading behaviours determined both from the miscue analysis of their strategy use and from teacher observations.

Academic Self-Beliefs about Reading and Self-Efficacy

The students' self-beliefs about reading and self-efficacy to read were assessed with brief self-rating questionnaires which used five-point Likert scales (see Appendices D, E, and F). The format used for these questionnaires had previously been found to be successful for the Self-Concept Scale for affective measures in The Smithfield Project (Waslander et al., 1994)

Academic Self-Beliefs about Ability to Read

In Initial Interview I and at regular intervals throughout the programme (see Table 3.1), the students were asked to self-rate their ability at silent reading, oral reading, reading comprehension and their speed of reading in terms of all the other students in their year (Year Nine or year Ten) (see Appendix A & Appendix D, question 6a). After the Christmas Vacation (a vacation of 8 weeks), they were asked to rate their reading ability for the preceding year as well as the current year. Self-ratings for the previous year in the first half of the programme would not have been comparable as the Year Nine students were in different contributing intermediate (junior high or middle) schools.

Self-Efficacy to Read and Academic Self-Beliefs about Reading Behaviours

Interview Self-Ratings

The students were asked to choose from the Neale Diagnostic Tutor series of graded passages (in Initial Interview II; and in 1998 at the end of Phase I and Phase II of the teaching programme, in 1999 at the beginning of term III and term IV of the teaching programme; at the end of the programme; and a term after the programme was completed):

- first, an 'easy-to-read' passage which was the hardest passage that they could read easily; and
- second, a 'hard-to-read' passage that was the hardest passage that they felt they could cope with reading.

The students were asked to judge this rating by scanning the page and looking at how difficult some of the harder words were. They were not asked to read the passage at this stage (see Appendix D). The actual difficulty level for these passages was calculated as a percentage accuracy score from their Reading Accuracy assessment using the alternate Neale Form I or Form II passages.

The students were then asked to rate how easy or hard these 'easy-to-read' and 'hard-to-read' passages were and whether or not they could read the passage without help. As has been already noted the alternate form reliability coefficients are high for the Neale. It was therefore possible using this technique to assess the student's beliefs about their reading ability to read text for which a reliable estimate of the actual difficulty level could be determined.

They were then asked to read a paragraph of their chosen 'easy to read' and 'hard to read' Neale passages. After this reading they were asked to self-rate their knowledge about the best ways to read difficult words, how hard they worked to decipher the words and how frequently they guessed the words (see Appendix D).

Weekly Strategy Running Record Self-Ratings

Every week the students were given a very short questionnaire which asked them to self-rate the difficulty level of the strategy series running record journal passage they were about to read. This gave a measure of their beliefs about their ability to read the passage (see Appendix E).

At the completion of the passage they were asked to complete the questionnaire by first rating how difficult the words in the passage had been to read and secondly rating how hard they had worked to decipher the difficult words and how often they guessed. The results from this questionnaire were reported in this study where they gave additional information to that obtained from the interview self-ratings.

Teacher - Student Discussions and Teacher Observations

Information about the students' reading self-beliefs, like the information about strategy use, was also obtained from teacher-student discussions both in the teaching setting of the reading room and in informal situations outside the classroom. Again, some of the most insightful comments arose in the informal settings.

Information was also obtained from teacher observations. These, like the observations about strategy use, were recorded in the students' diaries.

Further Factors Affecting Word Recognition

Phonological Processing

Poor phonological processing has been shown to be predictive of poor word recognition (Bradley & Bryant, 1983; Gillon & Dodd, 1994; National Reading Panel, 2000; Stanovich, 1986) because it prevents children from learning the letter-sound knowledge necessary for good word recognition. Letter-sound knowledge for reading can be assessed through a student's ability to read and spell non-words.

The students' ability with phonological processing and their ability to read and spell non-words were assessed using the Queensland University Inventory of Literacy (QUIL) (Dodd, Holm, & Oerlemans, 1996). These tests were administered at regular intervals throughout the programme (see Table 3.1). The nine subtests administered in this study are; Nonword Spelling, Nonword Reading, Syllable Identification, Syllable Segmentation, Spoken Rhyme Recognition, Spoonerisms, Phoneme Detection, Phoneme Segmentation and Phoneme Manipulation. Visual Rhyme recognition was not administered because the students in this study did not have the necessary reading skills.

Only raw scores have been reported in this study. The results for the nonword spelling subtest were kindly checked by an assistant (Catherine Moran, a PhD student in the Speech and Language Department of the University of Canterbury), who is experienced at administering the QUIL.

Language Ability

Language ability and especially semantic and syntactic knowledge is seen as being important in word recognition. Vocabulary knowledge was assessed at the beginning and end of the programme using the alternate forms of the Peabody Picture Vocabulary Test-Revised (PPVT-R) (Dunn & Dunn, 1981). The Clinical Evaluation of Language Fundamentals-Third Edition (CELF-3) (Semel, Wiig, & Secord, 1995) was used to give an indication of expressive and receptive language.

Vocabulary

The Peabody Picture Vocabulary Test-Revised (PPVT-R) (Dunn & Dunn, 1981) is an individually administered power test designed to measure receptive vocabulary for individuals who have grown up in a standard English speaking environment. The stimulus material is pictorial and the individual being assessed has only to point to a picture to answer. The PPVT-R is therefore very suitable for use with students with verbalising and/or reading difficulties. Although the PPVT-R is standardised for individuals speaking American English, it has been widely recognised and used in many English speaking countries. The standard scores should however be used cautiously.

Split-half reliability coefficients for Form L and Form M ranged between 0.84 and 0.86 for thirteen to fifteen year old adolescents and between 0.79 and 0.85 for fourteen to sixteen year old adolescents respectively. The two alternate forms have acceptable levels of reliability which are fairly similar to each other.

The stability of the PPVT-R scores decreases over time. Distinction is made between the coefficient of equivalence, where the alternate forms are administered within a week of each other in a test-retest situation, and the coefficient of stability, where the delay between the test and retest is more than a week. In this study, the alternate Form M was administered thirteen months after the administration of Form L. The manual states that such data should be considered as reflecting events that have affected test performance between the testing and retesting of the students.

Delayed retest correlation data is only available for the PPVT (Dunn & Dunn, 1981). The delayed coefficient of stability for the PPVT test retest with alternate forms where the alternate forms are

administered more than a year apart, ranges between 0.68 and 0.80 for thirteen to sixteen year olds. The manual states that PPVT scores are less stable for disadvantaged children including those in headstart programmes (median 0.58) than for regular school children (median 0.84).

In this study, the students' listening comprehension scores provided some indication of their ability. Although vocabulary on its own is not a measure of general intelligence it is recognised as the best single predictor of school success (Dale & Reichert as cited in Dunn & Dunn, 1981). It was thought, therefore, that the PPVT-R scores might provide a further indication of the students' ability if their word recognition ability were not the limiting factor in their engagement with the school curriculum.

Expressive and Receptive Language

The Clinical Evaluation of Language Fundamentals-Third Edition (CELF-3) (Semel et al., 1995) is an individually administered battery of subtests designed to identify and diagnose difficulties with language including semantics and sentence structure. Because it is standardised for American school children and young adults the standard scores should be used with caution.

The time required to administer the complete CELF-3 is considerable and many other assessments were required for this study. Therefore the CELF-3 version of the CELF-R subtests used by Gillon and Dodd (1994) were administered, as they had found that these subtests were useful in their study for screening children for language deficits. The subtests were one receptive language subtest *Word Classes* and two expressive language subtests *Formulated Sentences* and *Recalling Sentences.*

Two additional subtests were used to assess the students' ability to think of suitable words as they read. These two test were *Word Associations* and *Rapid Automatic Naming.*

The CELF Manual (Semel et al., 1995) reports test-retest stability coefficients for age thirteen years as follows: *Word Classes* 0.63, *Formulated Sentences* 0.53, *Recalling Sentences* 0.80, *Word Associations* 0.76. No reliability data were given in the manual for the *Rapid Automatic Naming* subtest.

A very high rate of interrater reliability for *Formulated Sentences* (0.95) *and Word Associations* (0.99) is reported in the manual. The scoring for *Formulated Sentences* and *Recalling Sentences* were kindly checked by an assistant (Catherine Moran) who has also had considerable experience in administering the CELF-3. The very occasional difference in scoring was resolved by discussion or, if necessary, seeking further information about a grammatical point.

The data for this study was assessed in a variety of ways, in order to triangulate the results. In addition, the assessments were administered at regular intervals throughout the programme. This was done for two reasons. The first was to identify trends in the students' achievements and reading behaviours through the course of the programme. The second was to determine such trends more accurately by using more data points to eliminate the effects of random measurement variability in the students' scores

CHAPTER 4

Case Study 1: Garth

The following six Chapters detail the case studies for the six adolescent participants in the reading programme. The analysis of each case study has three principle areas of focus: first the reading profile, secondly the relationships between each student's reading self-beliefs, cognition and metacognition and thirdly the language profile.

The reading profile covers:

- The Neale and Burt standardised assessment results; and
- The results from the two, year-long, running record series. These series are:
    - The timed fluency running record series using school journal texts which gave a record of their weekly reading accuracy and reading speed; and
    - The strategy running record series using school journal texts a level higher in difficulty level than those used for the fluency running record series. The results of the miscue analysis for this running record series include the strategies each student used for deciphering difficult words, which strategies they used most frequently, their self-correction rate for each strategy and when they used each strategy.

The section on the relationships between their cognition, metacognition, and reading self-beliefs discusses the participant's self-beliefs about their reading ability, their reading behaviours and the effectiveness of the programme.

The language profile section provides information about each participant's vocabulary, receptive and expressive language and phonological processing ability.

Finally, in each student's story, the important aspects of their reading and language achievement, the difficulties that contributed to their severe reading disability, their reading behaviours and their self-beliefs about their reading when they entered the programme are presented. The changes that the programme effected are then discussed in terms of the relationship between student's reading self-beliefs, their strategy use as a result of their self-beliefs and the effects their reading behaviours had on their reading achievement.

Graphing Procedures for the Six Case Studies

The equivalent reading age scores for the Neale and Burt are plotted against the number of weeks in which the teaching programme had been delivered when the score was recorded. Negative numbers count the number of weeks before the start of the teaching programme. The results calculated from the data obtained from each fluency or strategy running record were also plotted against the number of weeks in which the teaching programme had been delivered.

The yellow vertical lines denote the school holidays. The Christmas vacation lies between programme weeks 16 and 17, the red vertical lines denote the beginning and end of the teaching programme and the vertical magenta lines indicate the introduction of the strategy phase and the self-belief phase of the programme. Vertical broken black lines indicate changes in the difficulty level of the journal text.

In some graphs, one or more data points are considerably higher or lower than the other points in the record. These outliers are represented only by points on the graph. They have been excluded from the line graph and from the data for which the regression line has been calculated (for examples see Figures 4.4 & 4.27).

The regression lines and equations are shown in the same colour as the graphed data from which the equation was calculated. Each regression equation (for examples see Figure 4.4 and later Figures) is based on 33 teaching weeks (or sometimes 16 1998 weeks and 17 1999 weeks). The regression line drawn for 33 weeks is slightly inaccurate as the line is computer drawn for the full scale of 40 weeks on the x-axis. The scale was not changed to prevent this, as it was considered that 40 weeks gives an x-axis scale that is very easily interpreted and the effect on the line drawn is very small.

The coefficient of determination (r^2) represents the explained variance, that is, the variance in the measurements that can be reasonably attributed to the teaching programme or other events that might have been occurring in parallel with the teaching programme. The variance in the measurements that is not attributable to the teaching programme is given by ($1-r^2$). Throughout the following discussions the categories listed in Table 4.1 are used.

In the strategy running record miscue analyses for each of the participants, some of the samples are very small. The percentages are often derived from very small values and the differences between percentage values is therefore magnified. For example, if a sample has only two words in it then one word is 50% and the second is 100% of the sample. To show the extent of this effect the raw data has been included in the graphs for the percentage of the miscues that the participants used each strategy,

for the percentage of self-corrections for each strategy and for data relating strategy use to the number of syllables in a word.

Table 4.1. The descriptions used for the coefficients of determination.

Coefficient of Correlation (r)	100 x Correlation of Determination= (r^2)%	Description
≥ 0.8	≥ 64	High – Very High
0.6 – 0.8	36 – 64	Moderately High
0.4 – 0.6	16 – 36	Moderate
0.2 – 0.4	4 - 16	Relatively Low
≤ 0.2	≤ 4	Low

The initials of the titles of the journal articles read are given in the graph legends for the graphs of the percentage accuracy scores for the fluency and strategy running record series and for the graphs of the reading speeds for the fluency running record series. The key for these journal articles is given in Appendix G.

Introducing Garth

Garth was a 13-old Year Nine adolescent when he began the programme. His Progressive Achievement Test of Listening Comprehension (Reid, Johnstone, & Elley, 1994) percentile rank was 71. An informal listening comprehension assessment was given using the passages from the Form 1 series of the Neale Analysis of Reading Ability Revised (Neale, 1988) that were above Garth's reading ceiling. These passages were read to him and the comprehension questions administered. Garth's resulting informal listening comprehension score was 11.5 age equivalent years. But his Neale assessment reading accuracy score was 8.3 age equivalent years. Therefore, Garth fulfilled the criteria for inclusion in this study. He had a severe word recognition deficit that was preventing him from achieving his likely potential in reading comprehension (see Table 2.1).

Garth's family played a very active role in support of their children's education. His father held a prominent position in the scouting movement and his Mother was the Chairperson of the Board of Trustees for the local primary school and a district Kea leader.

Garth displayed an active interest in learning to read. At home he read *TV Hits* from cover to cover and books by authors such as Paul Jennings and R. L. Stine. He was talented at making teddy bears and doll's clothes which involved reading the patterns. The family also had the computer encyclopaedia *Encarta* which Garth sometimes read. In the second week of the programme, he found *The Horse Whisperer* by Nicholas Evans (1995) at the library and brought it to school to read. He had already enjoyed the film. Two terms later his family gave him this book for Christmas. He continued to bring it to every lesson for the rest of the programme.

Garth did not receive Reading Recovery as his school considered he did not need it. In Years Three and Four he received one half-hour a week of one-on-one tuition. Garth thought he only read in these sessions. In Year Six he again received a similar programme three times a week. In Year Eight he received further remedial instruction. Garth thought that at this time he was taught to say the word, read on and rerun. He thought he also received some instruction in sounding through words.

Garth's Remedial Reading Programme

In addition to the skills, knowledge strategies and self-beliefs taught to all the participants in the programme, Garth had two additional individual strategies, one that he was taught and one that he had devised himself.

- It was suggested to Garth that he might find it helpful to use the tip of his ballpoint pen to track along the letters and words. It was hoped that this strategy would help him to become more aware of the letter sequences in the words and thus would increase his accuracy and fluency.

- Garth had discovered that whispering or mouthing the words very quietly as he was silently reading was helpful. He explained that he did not hear words in his head but saw three-dimensional pictures. Whispering enabled him to hear the words.

Garth's Reading Profile

Standardised Assessments

Garth's Neale Reading Accuracy scores (see Figure 4.1) showed accelerated progress with a gain of three age equivalent years by the end of the programme. However, progress was not systematic throughout the programme. One age equivalent year of this gain was made in the first two terms and a second gain of nearly two age equivalent years was made over the Christmas holidays. Garth did

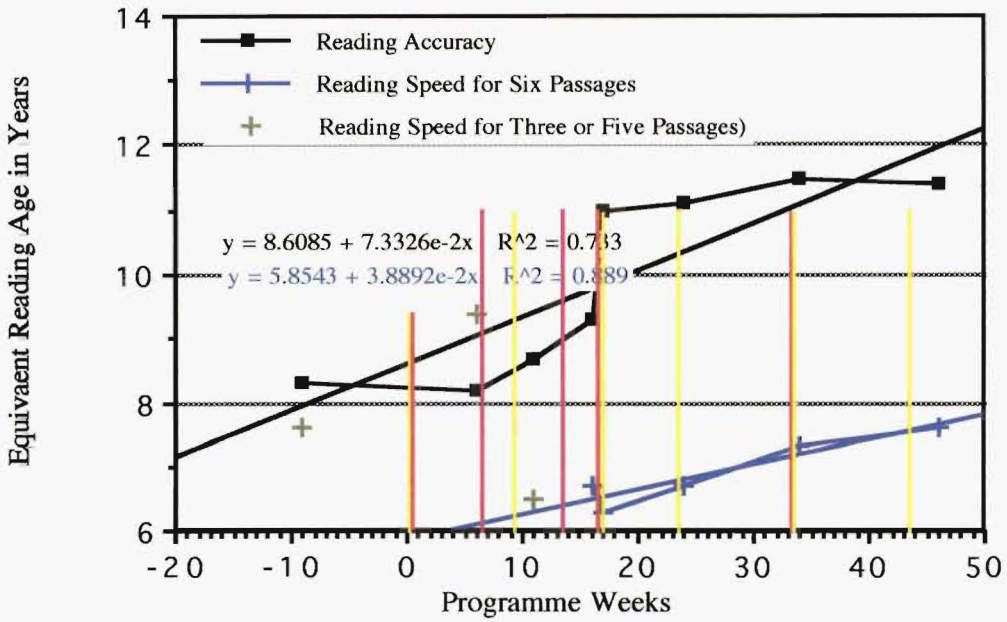

Figure 4.1. Garth's Neale Reading Accuracy and Reading Speed age equivalent scores.

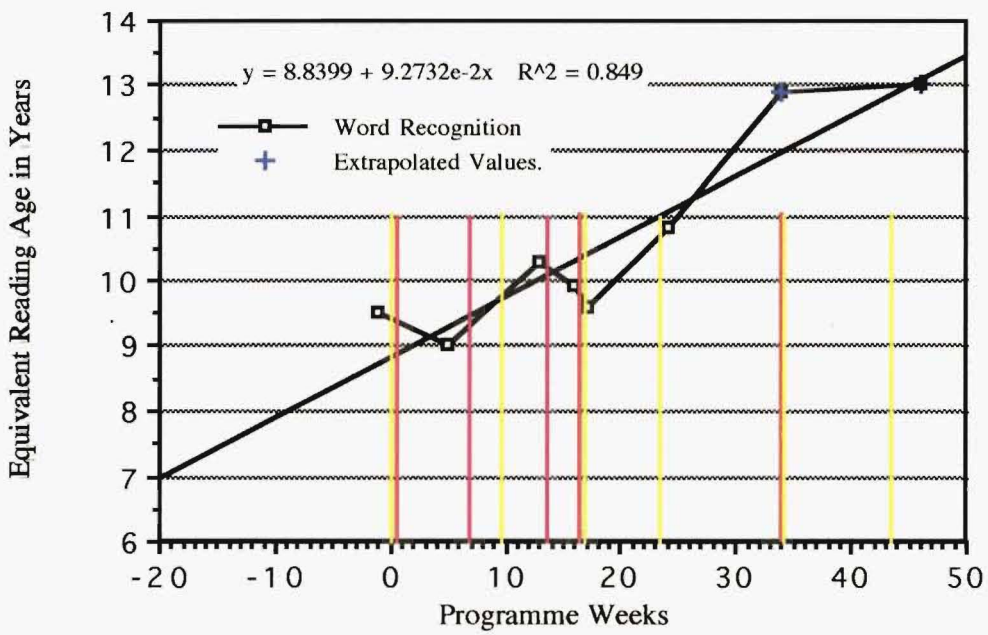

Figure 4.2. Garth's Burt Word Reading age equivalent scores.

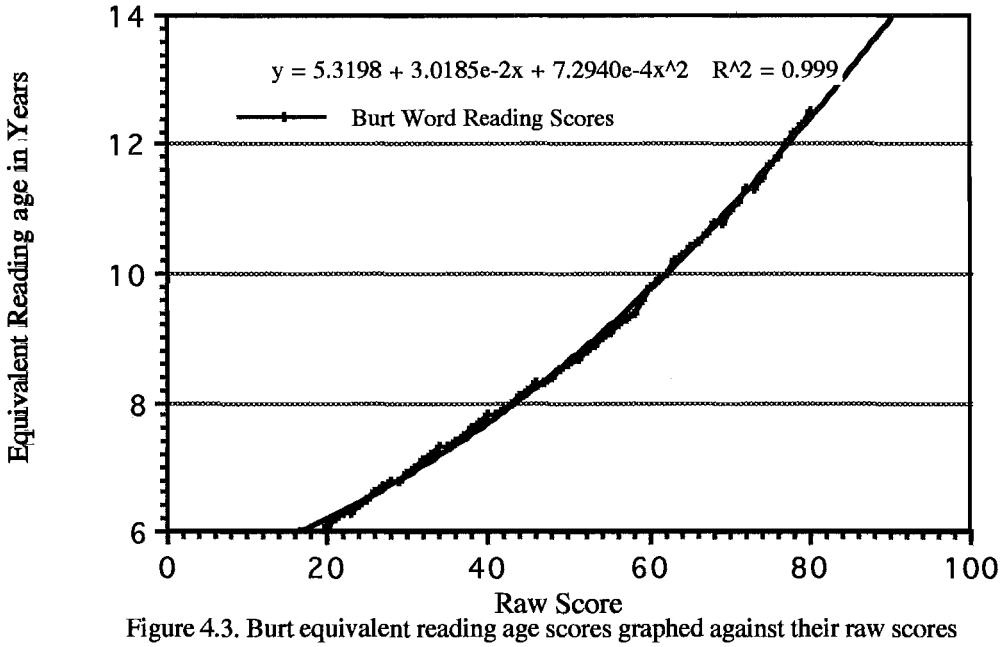

Figure 4.3. Burt equivalent reading age scores graphed against their raw scores in order to calculate the extrapolated values in Figure 4.2.

not maintain this rate of progress in 1999 and recorded a gain of less than six months during the final two terms of the programme. The regression line (the black straight line drawn through the data points that shows the relationship given by the black regression equation which has been calculated for the data) accounts for a high 73% of the variance in the equivalent reading age scores.

At the beginning of the programme Garth had difficulty deciphering many one and two syllable words (buckled, secret, no-one). He confused many words of similar appearance (sprig/spring, for/of, shelter/shoulder, lunch/launch) and occasionally miscued word endings (throw/thrown). He was unable to decipher most words containing three or more syllables (frequently, assistance, required). By the end of the programme, Garth could decipher many multisyllabic words (approximately, necessity, intermediate), but he still substituted words of similar appearance for the text word (tamer/trainer, this/that, wondered/wounded) and sometimes miscued word endings (wings/wing, villager/villagers).

Garth's Burt Word Reading Test scores (Gilmore, Croft, & Reid, 1981) (see Figure 4.2) showed an accelerated and slightly greater gain of 3.5 age equivalent years. He finished the programme with an equivalent reading age of 13 years. This was consistent with his chronological age. The final two scores Garth obtained were higher than those for which equivalent reading ages are tabled in the Burt Manual. The equivalent reading ages for these two scores were estimated by extrapolating from the reading ages given in the manual. Figure 4.3 shows the regression curve where the test raw scores are graphed against equivalent reading ages (converted to years and decimal fractions of a year) listed for them in the manual. Garth's final two scores were inserted into the regression equation representing this curve to obtain the extrapolated equivalent reading ages.

His progress was systematic during the programme except for a drop in equivalent reading age of nine months in the assessments administered immediately before the Christmas holidays in 1998 and immediately following the Christmas holidays in 1999. The regression line accounts for a high 85% of the variance in the reading age scores for the Burt.

The Neale and the Burt assessment scores showed similar gains by the end of the programme. The Burt scores were higher at the beginning and end of the programme by 1 – 1.5 years. Interestingly, over the Christmas holidays Garth's Neale scores improved by nearly two years and were, at the beginning of 1999, approximately 1.5 years higher.

These assessment results show that Garth was mastering the knowledge and strategies necessary to read multi-syllabic words and more difficult letter representations (e.g., the different sounds for the

letter g in 'magnificently' and 'original'. However, miscues involving words of similar appearance to the text word and inaccuracies with word endings show that his recognition of letter information often lacked accuracy

The Neale assessment results for speed of reading showed that Garth only achieved an equivalent reading age of 7.6 years over the full six texts (see Figure 4.1). Even for the easiest three passages (see Figure 4.1, weeks -9 and 6), his reading speed only rose to 9.5 age equivalent years) This very slow reading speed along with his frequent inaccuracies when reading letter information indicate that he was having to work very hard to apply his new knowledge and strategies. He had not achieved automaticity in deciphering letter information.

His higher Burt scores at the beginning and end of the programme suggest that he was gaining skills for reading letter information but had more difficulty when he was trying to integrate this knowledge with meaning. Over the Christmas holidays, when any reading would have been independent, his increased Neale scores and decreased Burt scores indicate that he appears to have learned to use meaning more successfully, perhaps at the expense of letter information. This also suggests a problem integrating letter information with contextual meaning.

To summarize, Garth made accelerated gains in word recognition during the programme but continued to have difficulties with accuracy and automaticity when deciphering letter information. The differences in his Neale and Burt assessment scores also indicate possible difficulties with integrating letter information and contextual meaning for word recognition.

Weekly Fluency Running Record Assessments

Clay (1985) rated the difficulty level of reading texts in terms of the reader's percentage reading accuracy as follows:

- *Easy text* *95 – 100% correct*
- *Instructional* *90 – 94% correct*
- *Hard text* *80 – 89% correct (p. 17).*

This classification of the difficulty levels gives an accuracy span of 4% to 5% for instructional and easy text respectively. In terms of this classification, small changes of 4% to 5% in reading accuracy can therefore be considered as important, especially if they span two of these classification levels.

Figure 4.4 shows the weekly self-corrected percentage reading accuracy scores for assessments where Garth was timed reading several paragraphs from an article or story in a Level 4 New Zealand school journal. The texts selected were at a 9.5-10.5 year level equivalent reading age for weeks 1-13, a 10-12 year level for weeks 14-31 and an 11-13 year level for weeks 32 –33. Garth would have been aware that reading speed was a focus of this series of assessments.

Nearly all of Garth's self-corrected fluency percentage accuracy scores lay between 90% and 96 % (see Figure 4.4). That is, most of his scores were either within Clay's instructional text level or verging into her easy text level. The regression line shows an increase of less than 3%, that is, in this fluency series of running records, when Garth was reading under pressure from the clock there was little overall improvement in his reading accuracy.

As was discussed in Chapter 3, the reading speed scores (see Figure 4.5) are inaccurate estimates, but they do give an indication of Garth's difficulties with reading fluency. When Garth came to a difficult word he would often remain silent until the standardised time of six seconds had elapsed. The time after which the word should be supplied. Garth would then start to verbalise his attempt at deciphering. If it appeared he might successfully identify the word if he was given more time.

Table 4.2 Garth's percentage accuracy and reading speed means for the weekly fluency and strategy running record scores.

Assessment Name	Programme Week Numbers.	Mean
Fluency RR % Acc.Graph	1-33	94.2%
Fluency RR Fluency Graph	1-33	58.7 w/m, RA 8.7 y
% Acc Strategy RR Uncorrected	1-33	83.9 %
	1-16	85.1 %
	17-33	82.8 %
% Acc. Strategy RR Self-Corrected	1-33	91.7%
	1-16	92.3 %
	17-33	91.2 %

Note: % Acc. = % Accuracy; Uncorrected = % accuracy when all stumbles and miscues are counted before self-correction; Self-Corrected = % accuracy after self-correction; RR = running record; w/m = words per minute; y = years. RA = reading age equivalent

Conversions from words/minute to equivalent reading age in years (see Table 4.2) were made using the Form 1 Tables of the Neale manual (1988, pp. 64-65). This was to make the results more readily

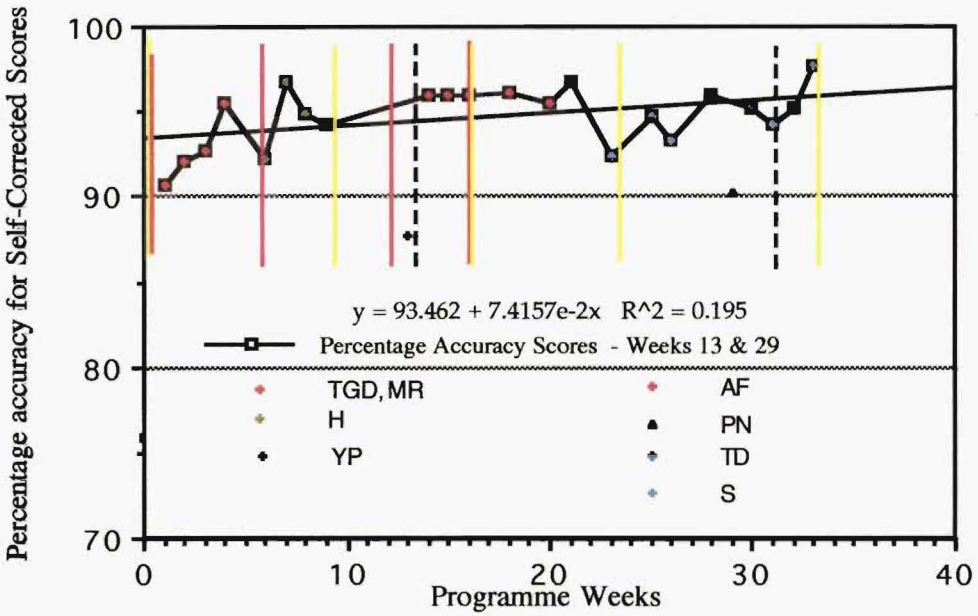

Figure 4.4. Garth's weekly self-corrected percentage accuracy scores for the fluency running record series. Black cross = week 13, black triangle = week 29.

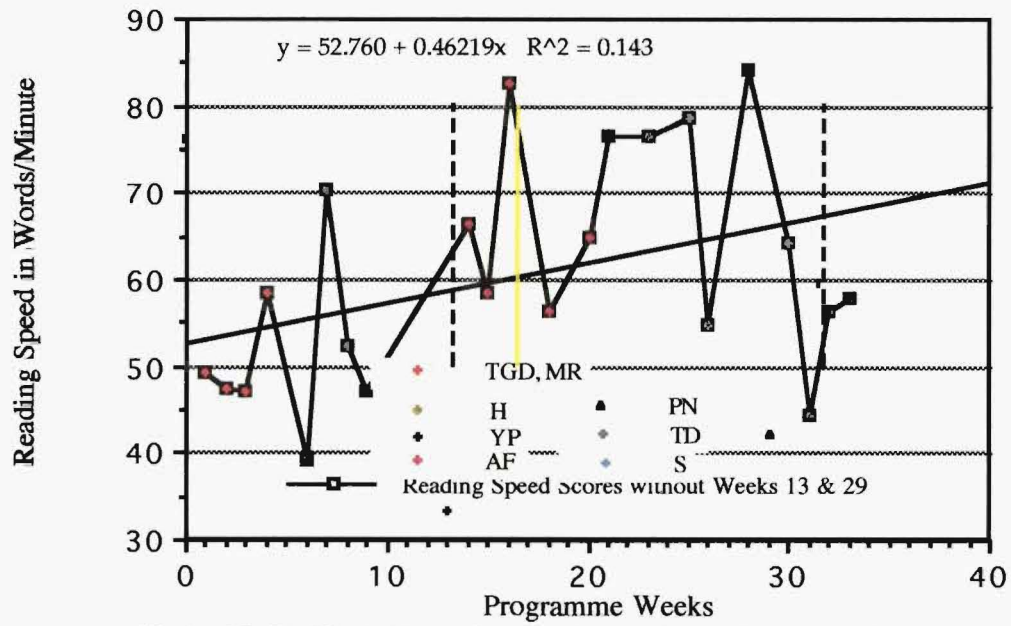

Figure 4.5. Garth's weekly reading speed scores for the fluency running record series. The key to the journal article initials is given in Appendix G.

understandable. However, it should be appreciated that these reading ages are estimates only and not standard scores.

Most of Garth's reading speed scores (see Figure 4.5) lay between 45 words/minute (7.5 years) and 80 words/minute (10.5 years). His mean reading speed was 60 words/minute (nearly 9.0 years). The reading speeds recorded in this fluency running record were low and often very low as were the Neale reading speed scores. They also remained very variable throughout the programme. Even towards the end of the programme Garth's reading speed for passages from the same story varied between 79words/min (10.5 age equivalent years) and 44 words/minute (7.3 age equivalent years). These results, like the Neale results, indicate that Garth made few gains, if any, in automaticity for deciphering letter information, or for word recognition, as the programme progressed.

Examples of Miscues

A scan through the weekly running record series revealed that Garth often miscued by replacing the text word with a real word that began with the same letter as the text word and was of similar appearance. Or sometimes he added or omitted a word ending. While these miscues were frequently self-corrected, they showed his variablility and lack of accuracy at deciphering letter information that contributed to his lack of fluency. Shades of meaning may also have been lost.

The following groups of miscues were examined: pronouns, tense, contractions of two words and the similar word group of/for/from/form (see Appendix H, Tables H1-H4) respectively. Selected examples from each of these groups are given in their context (see Appendix H Tables H1a-H4a).

- Garth's pronoun miscues are listed in Appendix H, Table H1. Scanning this Table reveals that sometimes Garth miscued with a word having the same initial-letters and a similar appearance to the text word (see week 2: everybody/everyone, the/they). Other miscues were words of similar appearance only (see week 4: his/this, we/he) Sometimes the miscues had neither the same first letter nor a similar appearance (see week 2: my/you, our/you).

When the miscued pronouns are viewed in their context it can be seen that many miscues involved agreement with a person or object previously mentioned in the text (see Appendix H, Table H1a examples: 1, 8, 9a, 9b, 15 & 16). In these examples Garth had allowed the meaning leading up to the miscued word to determine his choice of word rather than integrating accurate letter information with the text meaning.

The example (see Appendix H, Table H1a) listed from the Neale text is a good example of such miscues where Garth predicted from the meaning in the immediately preceding text. Garth selected a pronoun to represent Tina, the person previously mentioned, and not the correct possessive case. Garth appeared to have carefully followed the print on the first reading but used prediction from the context in the preceding sentence to identify the word on subsequent readings. If the sentence did not sound correct, he self-corrected. This example suggests that although the percentage of pronouns that Garth miscued was low (see Appendix H, Table H1), he was likely to consistently miscue pronouns in particular contexts.

- Garth frequently read present tense as past tense (see Appendix H, Tables H2 & H2a: 9, 10b, 10c, 10d, 11, 23a, 23b, 23c, 23d). Most of the texts that Garth read in this teaching programme were written in past tense. It seems that, because this was the usual construction, he often read verbs with the expectation that they would be in the past tense. Accurate letter information was not integrated with text meaning.

- A small percentage of contractions of two words (see Appendix H, Table H3) were consistently miscued throughout the running record series. For these miscues Garth sometimes gave the uncontracted form (did not/don't), sometimes missed the contraction of two words (had/hadn't) and sometimes substituted a different contraction (we're/we've, I'll/It'll). Incomplete letter information was used in cueing these words.

  In one example (see Appendix H, Table H3a), the negative contraction 'couldn't' was used instead of the more complex negative construction 'could get no' used in the text. Again Garth had read at least some contraction miscues from an expectation of meaning derived from the context rather than the integration of accurate letter information with meaning.

  - Infrequently, but throughout the running record series, Garth interchanged words from the set of similar words, from/for/of/form (see Appendix H, Table H4). If these miscues are considered in their context (see Appendix H, Table H4a), it is evident that Garth predicted each miscue from the meaning of the preceding text used in conjunction with inaccurate and incomplete letter information. Such miscues, if not self-corrected, often produced small changes in the author's meaning (see Appendix H Table H4a: 1).

To summarize, Garth miscued frequently. His miscues were sometimes words with the same first letter and a similar appearance to the text word, sometimes words with only a similar appearance to

the text word, and sometimes words that did not appear to have any letter information that was similar to the text word. His miscues were usually predicted from the context of the preceding text.

Garth engaged in the "enlightened guessing" strategy use recommended by the then Department of Education (1985, p.25). He sampled the word for letter information, predicted from the meaning of the preceding text, then either confirmed his prediction from the meaning of the following text or, if he found a lack of agreement in the syntax or meaning, he self-corrected. Unfortunately the letter information he used was inaccurate and incomplete and led to his high miscue rate.

Weekly Strategy Running Record Assessments

Garth read New Zealand school journal text graded at an 11-13 year age equivalent level for weeks 1 to 30 and journal text graded at 12-14 year level for weeks 31 to 33. Figures 4.6 and 4.7 show the uncorrected and self-corrected weekly running record percentage accuracy scores respectively. These uncorrected scores include all miscues and stumbles.

Throughout the programme, where separate regression lines are drawn for 1998 and 1999, the lines have been hand drawn as the computer drawn line results from calculations for the full 40 weeks.

For the first two terms of the programme Garth's uncorrected scores lay between 80-89% within Clay's (1985) hard text category (see Figure 4.6). His scores were very variable and consecutive weeks often varied by 4% or 5% and once by as much as 7%. The regression line shows an overall decrease of 2% in accuracy by the end of these first two terms. This 2% is half the variation that often occurred from week to week and, as is verified by the regression coefficient, was too small to be significant.

After the Christmas holidays, for the third term of the programme the range of Garth's scores dropped to between 70% and 85%. The variation in scores from week to week was high, usually between 7% and 15%. During the fourth term, the scores ranged between 83% and 90%. The variation between weekly scores was usually between 2% and 4%.

Self-correction lifted Garth's mean 1998 and 1999 scores by 7% and 8% respectively (see Table 4.2). In 1998 most of his scores lay between 90% and 95%. These scores were in Clay's (1985) instructional text category, with some even verging into her easy text category. In 1999 Garth's scores dropped in the third term of the programme to lie in the 85% to 90% range in Clay's hard text

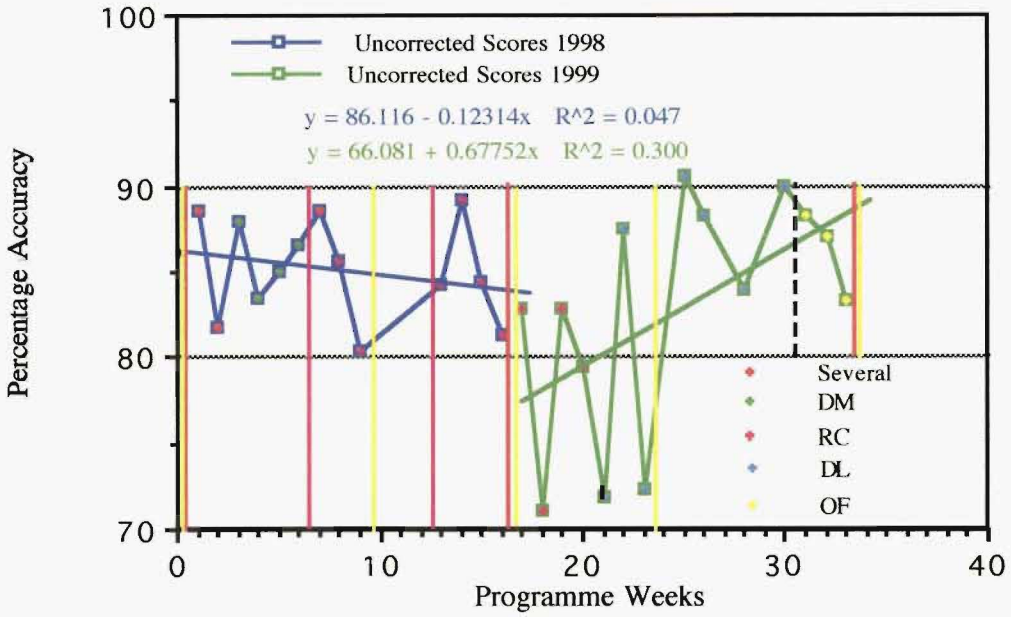

Figure 4.6. Garth's uncorrected weekly percentage accuracy scores for the strategy running record series.

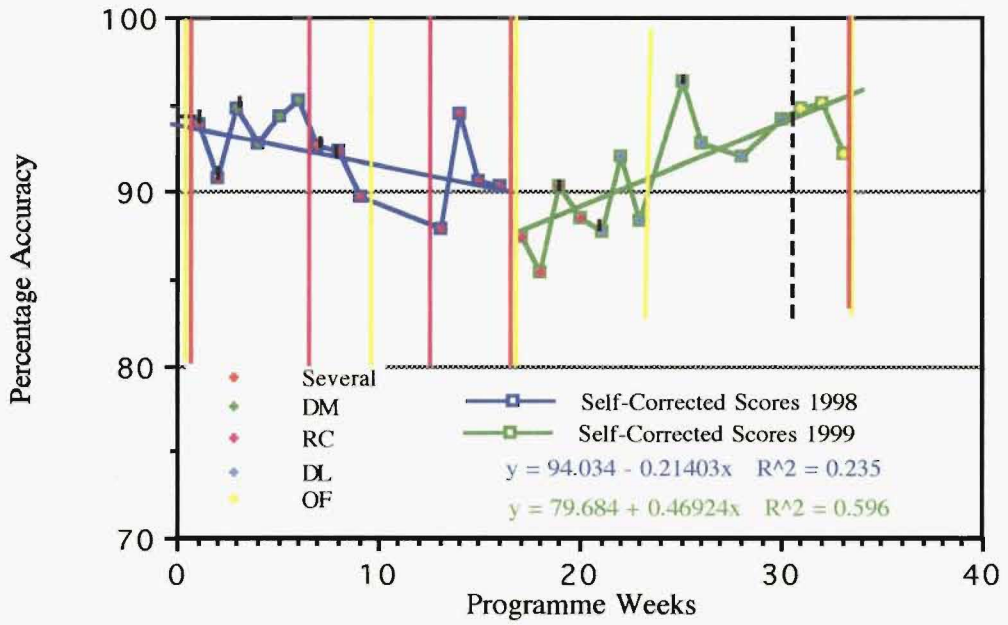

Figure 4.7. Garth's weekly self-corrected percentage accuracy scores for the strategy running record series.

category. In the fourth term of the programme Garth's self-corrected scores lifted again to lie within a range of 92% to 96%.

Garth's self-corrected scores lay, for the most part, within Clay's instructional text category with some scores verging into her easy text. But given his high rate of self-correction, these categories could not be considered to be the categories of a normally developing learner reader. His uncorrected scores give an indication of the laborious and difficult task he found reading from this level of journal text.

Apart from his scores for term three of the programme Garth's percentage accuracy scores for the strategy running record series usually lay between 90% and 96% as did his percentage accuracy scores for the fluency running record. Increasing the difficulty level of the journal articles from the fluency series levels of 9.5-10.5, 10-12 & 11-13 years to the difficulty levels 11-13 & 12-14 years of the strategy series only depressed the mean reading percentage accuracy by 2% (see Table 5.2).

To summarise, Garth's uncorrected percentage accuracy scores for the strategy running record series lay within Clay's (1985) hard text category. Self-correction for the most part lifted these scores into Clay's instructional text category with some scores verging into her easy text category. This strategy running record series was characterised by a downturn in both the uncorrected and self-corrected scores during the third term of the programme.

Strategy Use for Word Recognition

Garth's miscues were classified as sounding (Sd), initial-letter (IL), similar word (Sm), Meaning (Mn), and Inventing (In); the categories described previously in this Chapter. Garth had one additional strategy the long-look (LL) strategy for which he looked at the word for several seconds. He said that he both looked at the word to see if it occurred to him and he reran the sentence several times to see if he could think of the word.

Relative Proportional Use of Each Strategy

Figures 4.8 and 4.9 graph the week-by-week strategy use for the sounded miscues and the initial-letter miscues respectively as a percentage of the total number of miscues for which Garth had used a strategy to decipher. In 1998, Garth's mean percentage use for each of these two strategies was very similar (see Table 4.3). His percentage strategy use was very variable but usually lay between 20% and 50% for both strategies. His use of the sounding strategy was more variable than his use of the initial-letter strategy and on three occasions his percentage use fell below 20%.

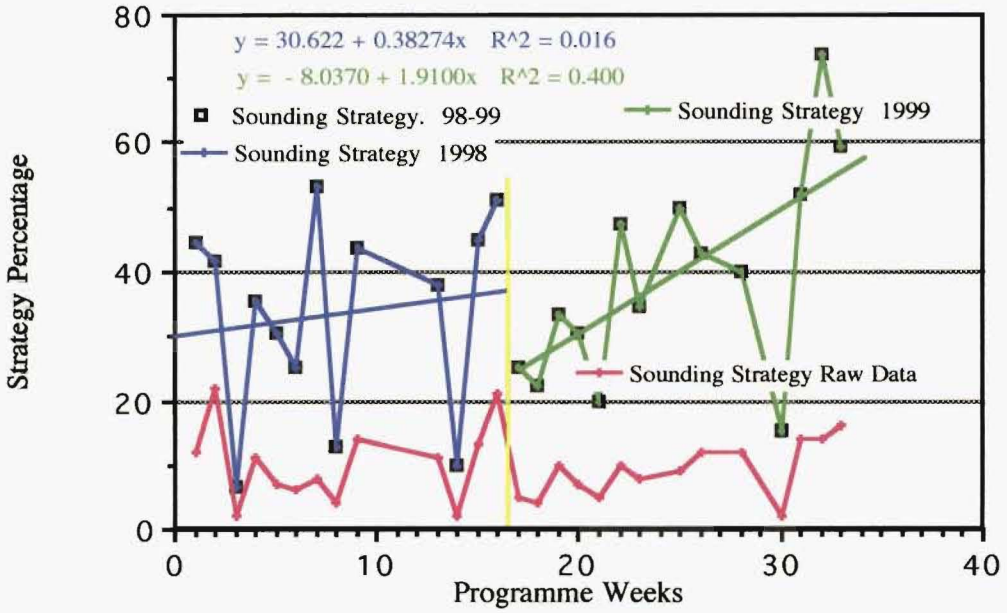

Figure 4.8. Garth's weekly percentage use of the sounding strategy in the strategy running record series.

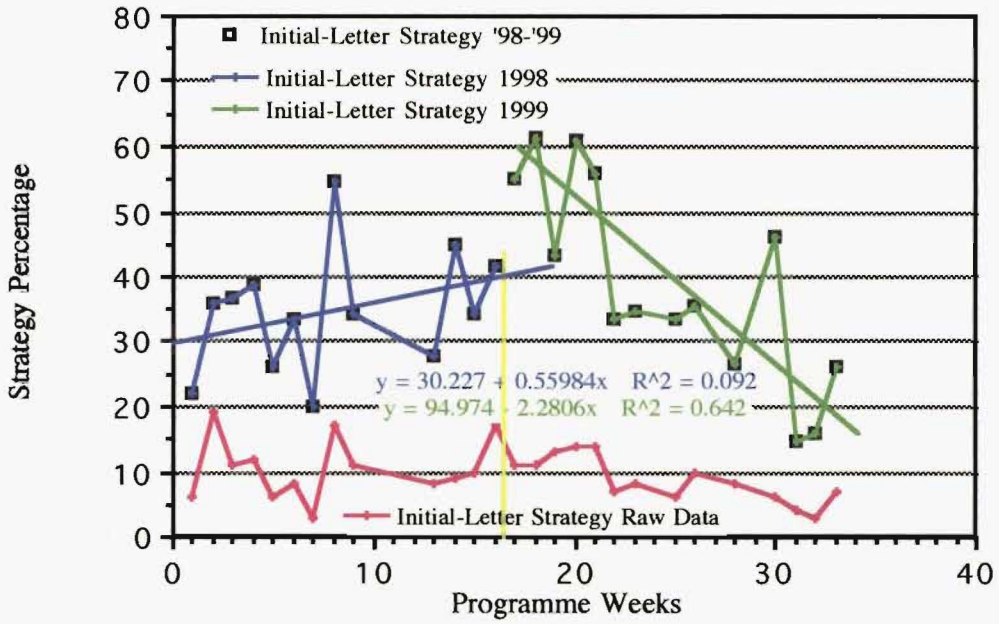

Figure 4.9. Garth's weekly percentage use of the initial-letter strategy for the strategy running record series.

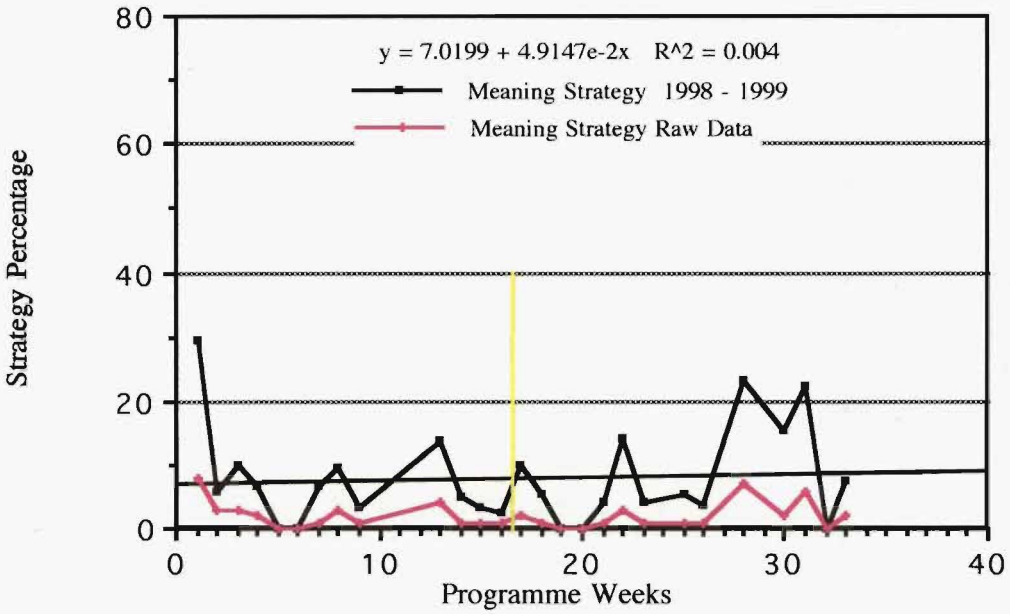

Figure 4.10. Garth's weekly percentage use of the meaning strategy for the strategy running record series.

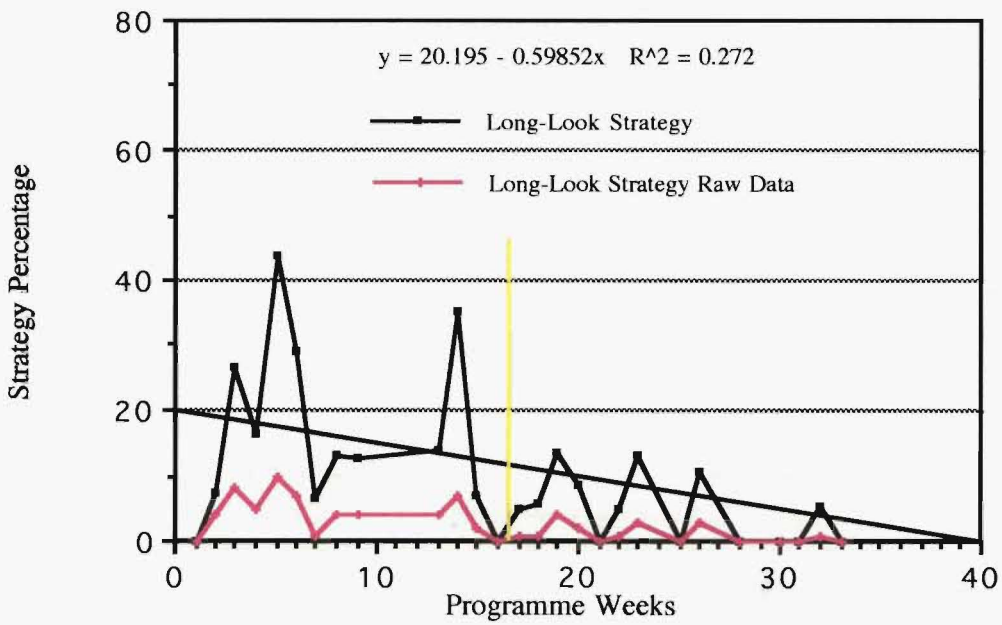

Figure 4.11. Garth's weekly percentage use of the long-look strategy in the strategy running record series.

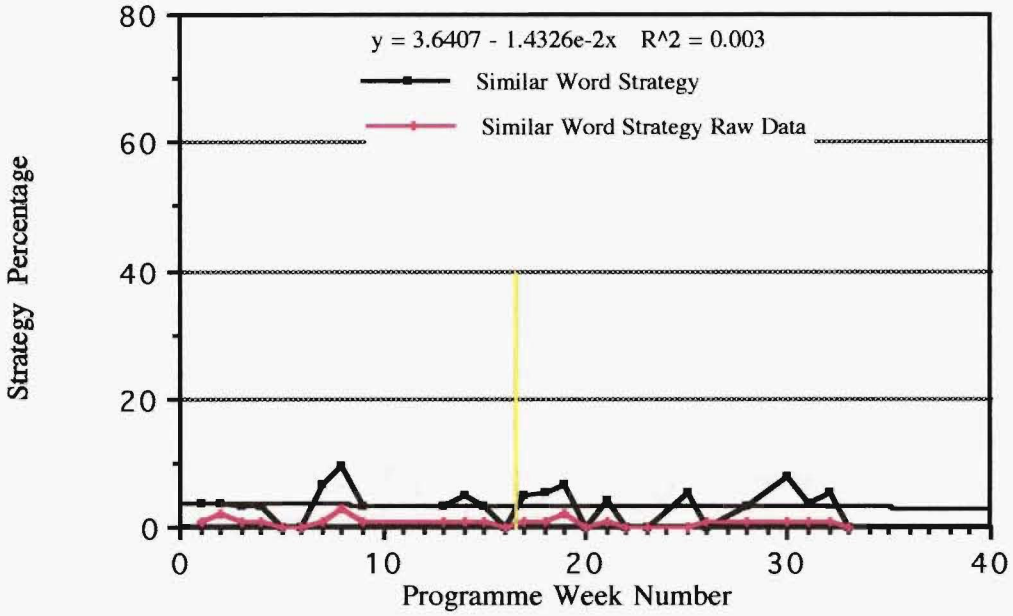

Figure 4.12. Garth's weekly percentage use of the similar word strategy in the strategy running record series.

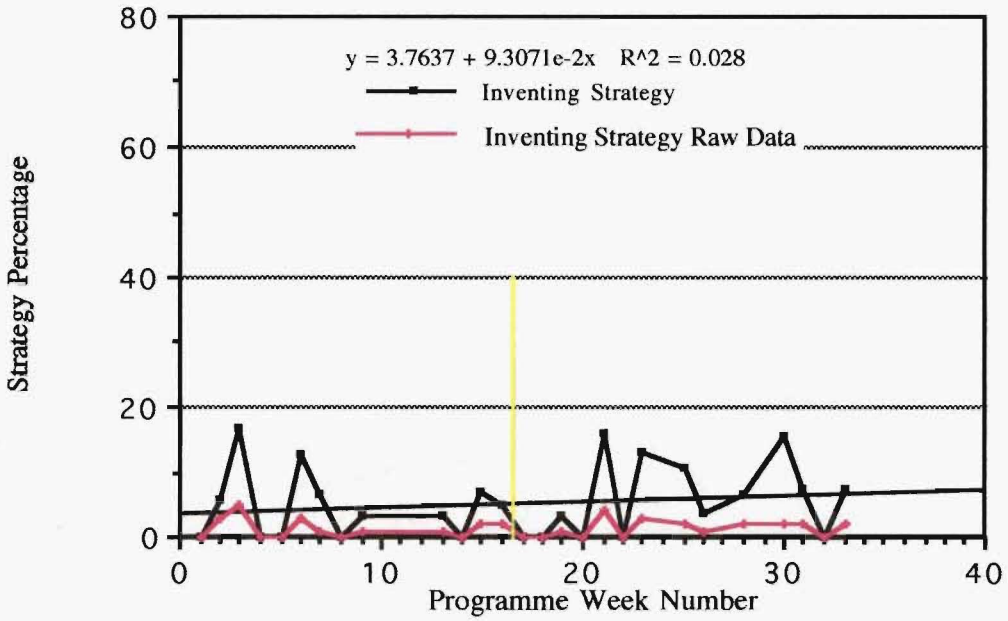

Figure 4.13. Garth's weekly percentage use of the inventing strategy in the strategy running record series.

In 1999, although the mean use for each strategy was still very similar, Figures 4.8 and 4.9 show two very different patterns of use. For the sounding strategy, the regression line shows an increase in percentage use of 30 % whereas for the initial-letter strategy it shows a decrease of slightly more than 35%. During the two terms of 1999 Garth changed from usually using the initial-letter strategy to usually using the sounding strategy. The week 30 running record was characterised by a high number of miscues of frequently used initial-letter miscues (storekeeper/shopkeeper, an/any, went/when).

Table 4.3. The strategies Garth used for deciphering his miscues.

	∑ Str. Misc.	Sounding	Initial-Letter	Meaning	Similar Word	Inventing	Long-Look
Mean 98-99	26.2	9.4	9.7	2.0	0.9	1.3	2.8
Range	13 - 53	2 – 22	3 – 19	0 – 8	0 – 3	0 – 5	0 – 10
Mean % 98-99		36.4	36.8	7.8	3.3	5.3	10.3
Mean % 1999		39.0	38.8	8.3	3.2	6.0	4.7

Note: The values in this table supplement the raw data shown in Figures 5.8 – 5.13. ∑ Str. Misc = the total number of miscues that Garth had used a strategy to decipher.

Teaching the knowledge and strategies for sounding unfamiliar words was the focus of the teaching programme. Garth was sounding some words at the beginning of the programme (see Figure 4.8) and increased his use of this strategy during 1999. Although the ultimate aim of the programme was automatic, fluent, miscue-free reading his increase in the use of this strategy shows that the programme was effective in bringing about changes in Garth's reading behaviours.

If Figures 4.6 and 4.7 are compared with Figures 4.8 and 4.9, it appears that the increased variability and downturn of scores in the third term of the teaching programme are associated with an increase in the use of the initial-letter strategy and an accompanying decrease in use of the sounding strategy. High use of the initial-letter strategy seems to have accompanied low and very variable uncorrected percentage accuracy scores. Increasing sounding behaviours through 1999, with an associated increasing attention to letter information, appears to have been accompanied by a corresponding increase in Garth's percentage accuracy scores.

Garth made small but consistent use of the meaning, similar-word and inventing strategies throughout the programme (see Figures 4.10, 4.12 and 4.13). He used the long-look strategy more often (see Figure 4.11) but this usage was still less than a third of his initial-letter or sounding

strategy use (see Table 4.3). This use of the long-look strategy declined and in 1999 his mean use was just over a quarter of his mean use in 1998.

Self-Correction Behaviours for Each Strategy

Self-correction of miscues was very variable for the sounding, initial-letter and long-look strategies (see Figures 4.14, 4.15 and 4.16). For the meaning, long-look, similar-word and inventing strategy miscues in particular, very small samples, usually of less than five miscues, can be seen to have inflated the percentage differences between the scores thus increasing the apparent variability (see Figures 4.16, 4.18 and 4.19).

For both the sounding strategy and the initial-letter strategy, the regression lines show a downturn in self-correction behaviour in 1998 and an upturn in 1999 (see Figures 4.14 and 4.15). However, for the sounding strategy, the regression line shows an insignificant systematic relationship to the programme in 1998 and a relatively insignificant systematic relationship in 1999. For the initial-letter strategy, the regression line shows a moderate systematic relationship to the programme in 1998 and an insignificant systematic relationship in 1999. That is, the week to week variability of Garth's self-correction behaviours was of more consequence than any trend associated with the programme except for the downturn in his initial-letter self-corrections in 1998.

A comparison of his mean self-correction percentages (see Table 4.4) for the sounding and initial-letter miscues revealed that Garth self-corrected his sounding strategy miscues nearly twice as often as his initial-letter strategy miscues. For most weeks in 1998 Garth self corrected between 38% and 100% of his sounding miscues but only between 10% and 50% of his initial-letter miscues. In 1999 he self corrected between 35% and 80% of his sounding miscues but only between 10% and 50% of his initial-letter miscues. Garth was apparently more often aware of his miscues when he used the sounding strategy.

Table 4.4: The proportion of the initial-letter and sounding strategy miscues that Garth self-corrected.

	% Sounding sc	% Initial-Letter sc	% Long-Look sc
Mean '98-'99	64	37	22
Range	27 - 100	11-64	0 - 100
Mean '98	67	39	36
Mean'99	62	35	4 (only 1 misc)

Note: sc = self-corrected miscue, sounding = sounding strategy Initial-Letter = initial-letter strategy, Long-Look = long-look strategy.

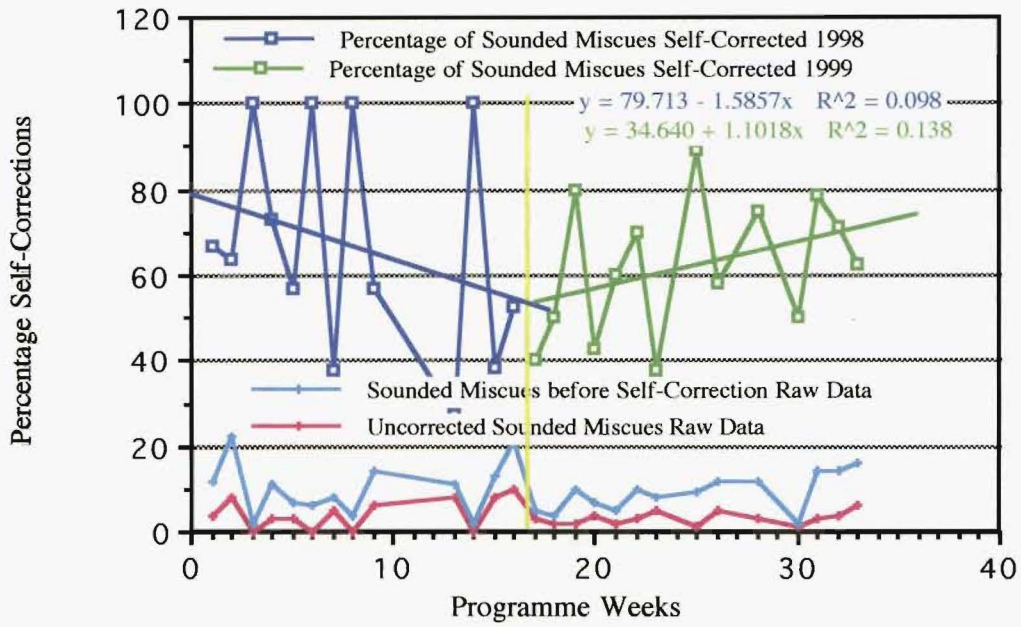

Figure 4.14. The percentage of sounding strategy miscues that Garth self-corrected for the strategy running record series.

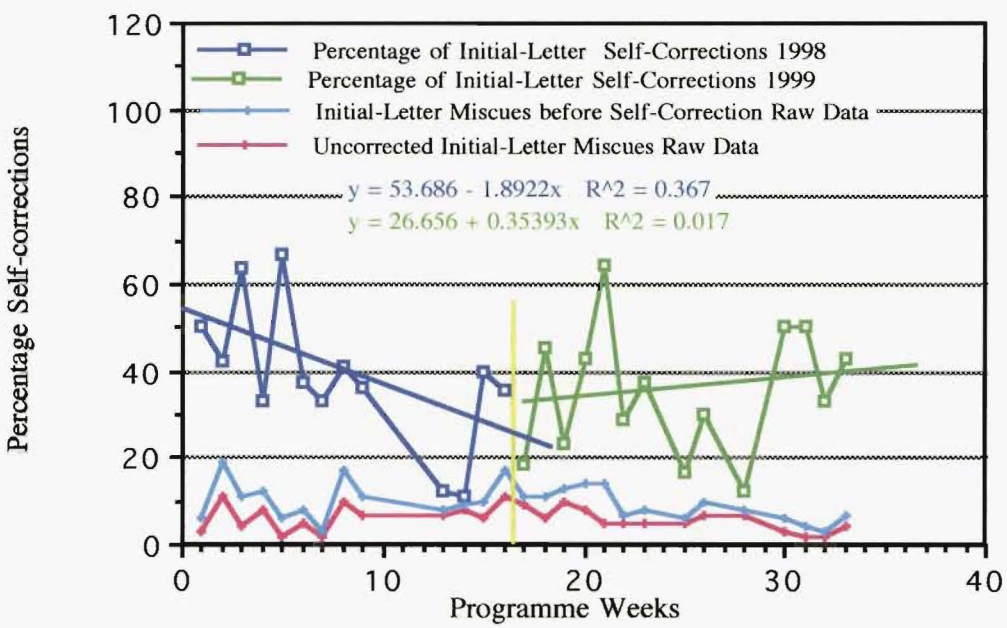

Figure 4.15. The percentage of initial-letter strategy miscues that Garth self-corrected for the strategy running record series.

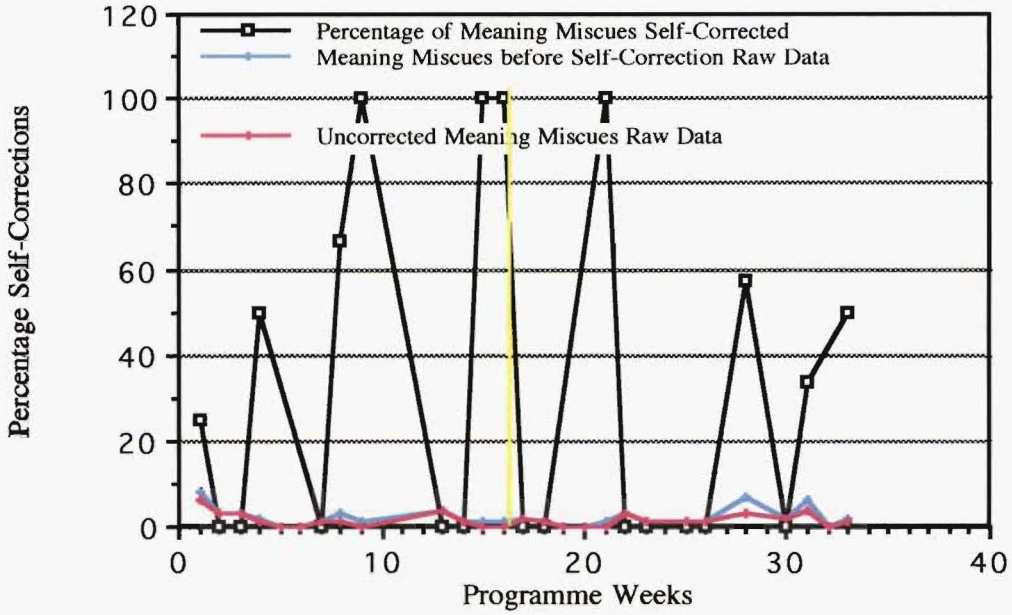

Figure 4.16. The percentage of meaning miscues that Garth self-corrected for the strategy running record series.

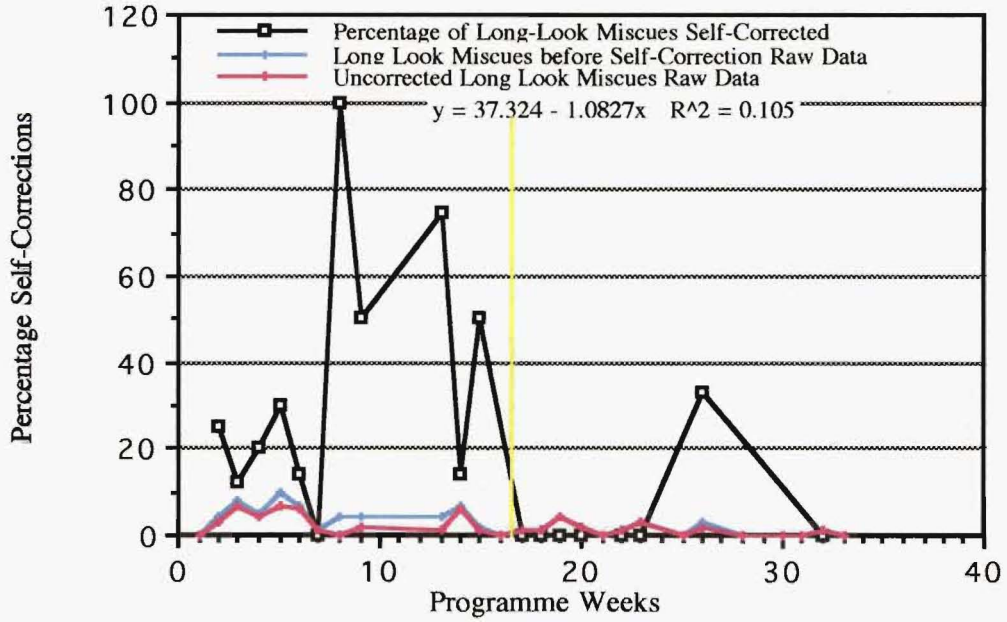

Figure 4.17. The percentage of long-look strategy miscues that Garth self-corrected for the strategy running record series.

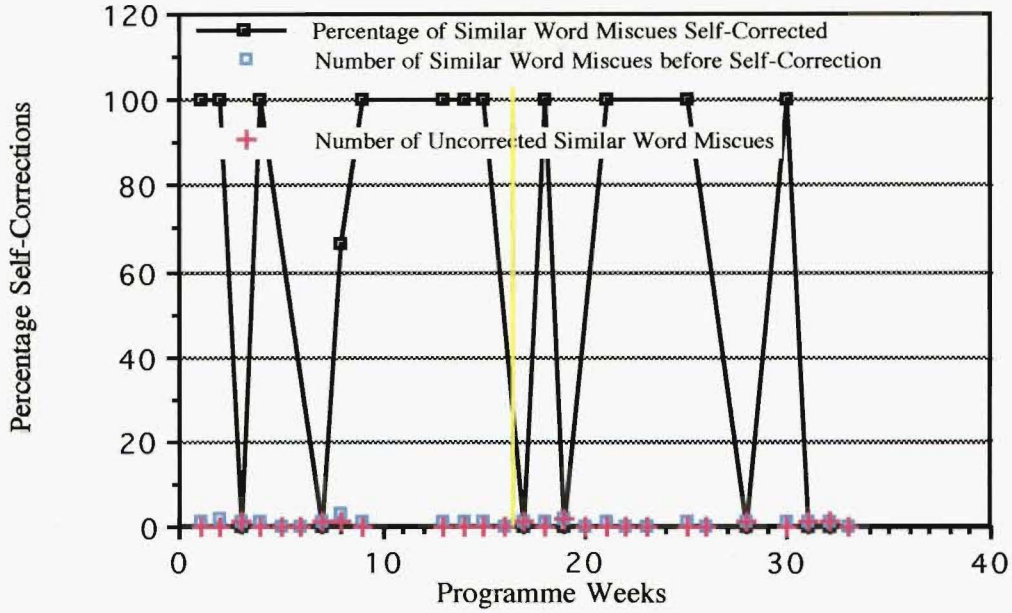

Figure 4.18. The percentage of similar word strategy miscues that Garth self-corrected for the strategy running record series.

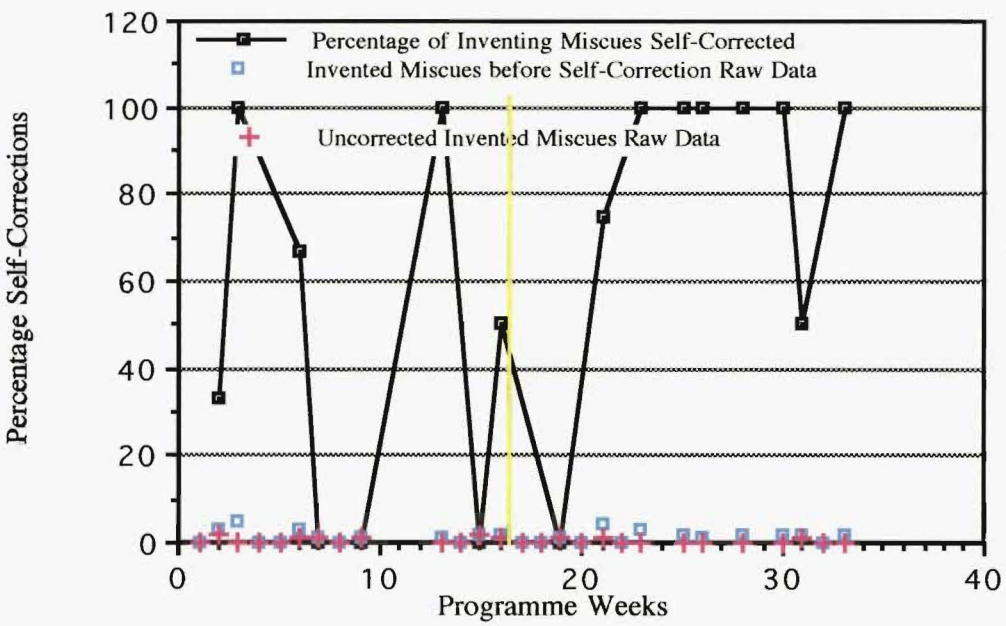

Figure 4.19. The percentage of inventing strategy miscues that Garth self-corrected for the strategy running record series.

Characteristics of Sounded and Initial-Letter Miscues

The results in Table 4.5 are derived from small samples that have been further subdivided into three groups of miscues. The differences between percentage values are therefore likely to have been magnified. However, they do give a useful comparison of the characteristics of each strategy.

Garth's initial-letter miscues were usually real words. 80% were words that had a similar appearance to the text word and over half had an acceptable meaning in the passage (see Table 4.5). The fact that 80% of Garth's miscues which began with the same letter as the text word had a similar appearance to the text word further supports the findings, discussed previously, that Garth had not yet achieved sufficient automaticity in the use of accurate and complete letter information for deciphering words.

When he used the sounding strategy, only half of Garth's miscues were real words, less than half were words with a similar appearance to the text word and only a quarter had meaning within the passage. Again he was inaccurate in deciphering letter information when he sounded through a word. In addition, 75% percent of his sounded miscues (see Table 4.5) lacked meaning in their context suggesting that he had difficulty integrating the meaning cue with the letter information to find the correct text word.

Table 4.5. The characteristics of Garth's sounded and initial-letter strategy miscues.

	% Real Words	% Similar Words	% Meaning Words
	Sounded Miscues		
Mean	48	41	24
Range	0 - 100	0 - 100	0 - 100
	Initial-Letter Miscues		
Mean	96.5	79	59
Range	71 – 100	40 – 100	0 - 100

Note: Meaning Words are words that gave an acceptable meaning within their sentences. This was not necessarily the author's meaning nor did the meaning necessarily fit with the rest of the passage.

If the characteristics of Garth's initial-letter and sounding strategies are compared then it can be seen that his initial-letter miscue was:

- Twice as likely to be a real word;
- Twice as likely to be a word of similar appearance to the text word; and
- More than twice as likely to have meaning in the sentence.

Any reader, such as Garth, who uses incomplete and inaccurate letter information, can only have recourse to inconsistencies in meaning and syntax to determine when they have miscued. From these results it can be seen that, for the initial-letter strategy, where over half the miscues were real words with similar appearance to the text word and had meaning in their context, Garth would have had no means of determining that he had deciphered a word incorrectly. Further, he was likely to have developed the self-belief that he was very often successful when he used this strategy.

For the sounding strategy, where less than half of his miscues were real words with a similar appearance to the text word and only a quarter of the miscues had meaning in their context, Garth would have frequently perceived that he had miscued. These results explain why Garth self-corrected miscues for which he had used the sounding strategy more frequently than he self-corrected miscues for which he had used the initial-letter strategy (see Table 4.4). His relative lack of success with this strategy would also have engendered the more realistic self-belief that he was often unsuccessful when he used this strategy and certainly much less successful than when he used the initial-letter strategy.

Strategy Use and Word Length

Table 4.3 shows that Garth used the sounding and initial-letter strategies most frequently. Table 4.6 presents results to show that the number of syllables in the miscues influenced the strategy Garth selected when he attempted to decipher them.

Garth used the sounding strategy most frequently for words of two or more syllables (see Table 4.6). He used this strategy for nearly half the two syllable words and for approaching two-thirds of the miscues having three or more syllables. His week-to-week percentage use for the two syllable miscues was very variable ranging for the most part between 20% and 80% (see Figure 4.21). The variability in the percentage use of the sounding strategy for miscues of three or more syllables is partly the result of very small sample sizes (see Figures 4.22 and 4.23). The regression lines graph an increase in the use of sounding for two and three syllable words (see Figures 4.21 and 4.22). The regression coefficients show an insignificant and a relatively insignificant to moderate systematic variance associated with the programme respectively.

The initial-letter strategy was Garth's strategy of choice for more than half of the one-syllable miscues (see Table 4.6). He also used this for one third of his two syllable miscues. His week-to-week use of this strategy for one and two syllable words was variable in 1998 (see Figures 4.24 and 4.25). In 1999 he decreased his use of this strategy for one and two syllable words. The regression

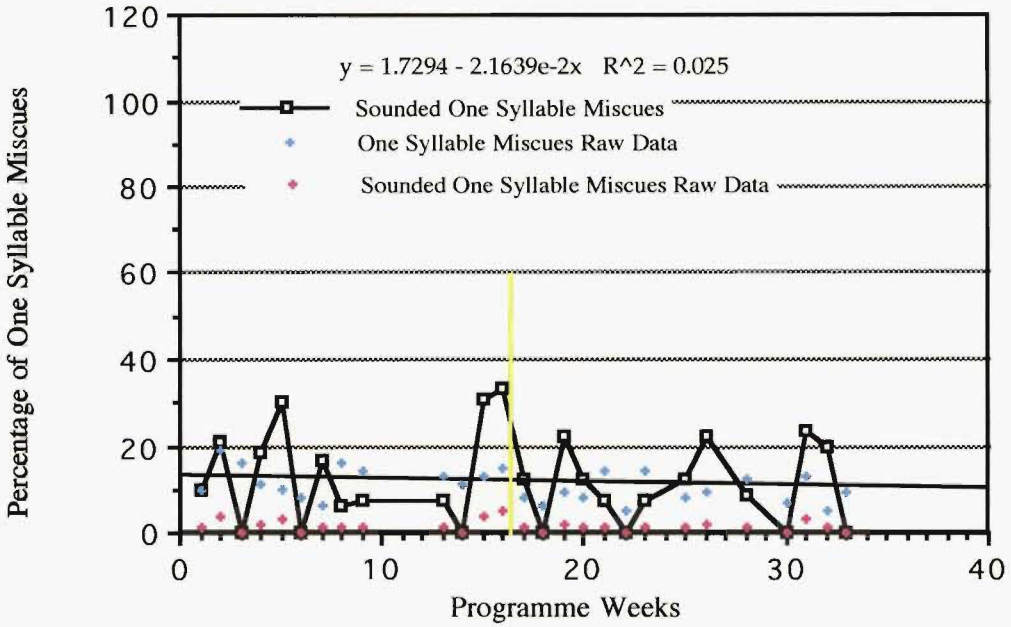

Figure 4.20. The percentage of one syllable miscues for which Garth used the sounding strategy.

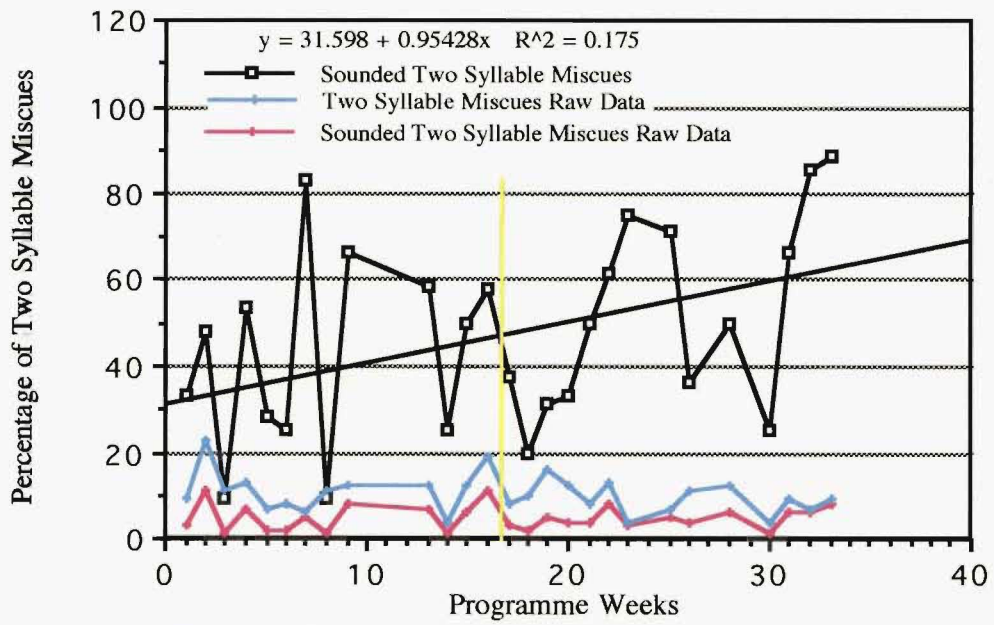

Figure 4.21. The percentage of two syllable words for which Garth used the sounding strategy.

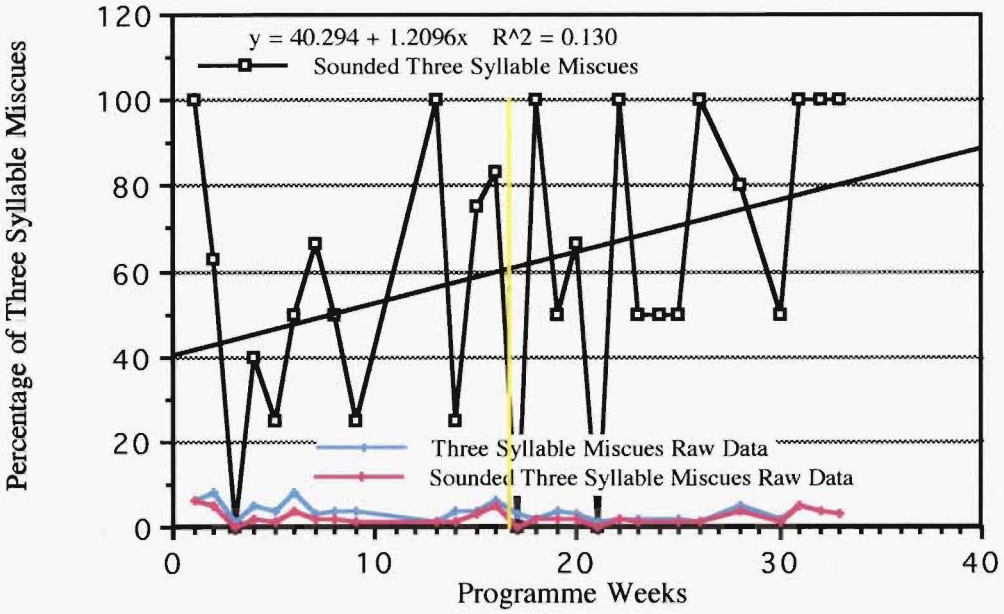

Figure 4.22. The percentage of three syllable miscues for which Garth used the sounding strategy.

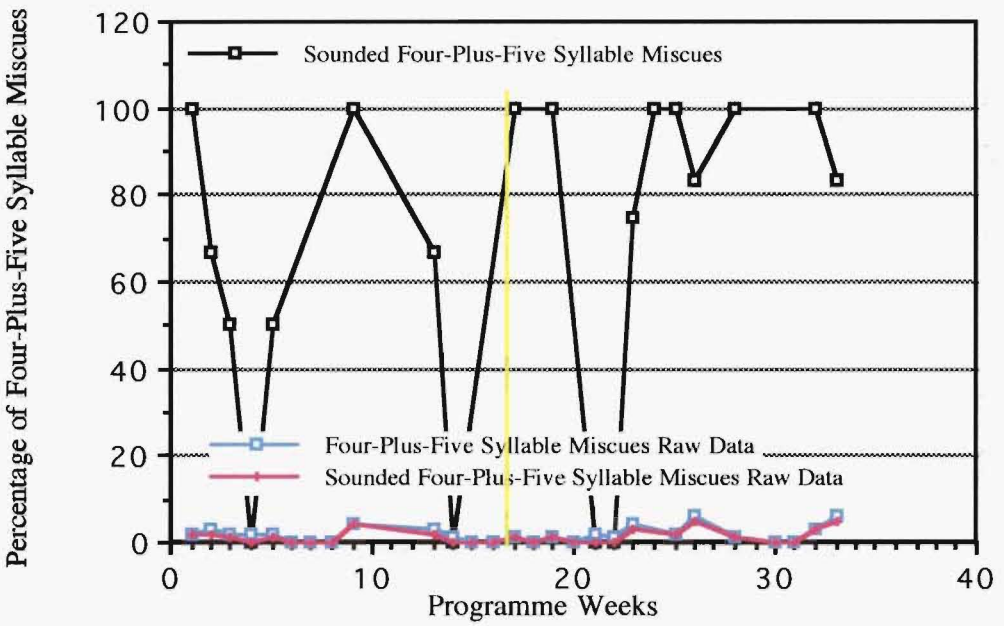

Figure 4.23. The percentage of four-plus-five syllable miscues for which Garth used the sounding strategy.

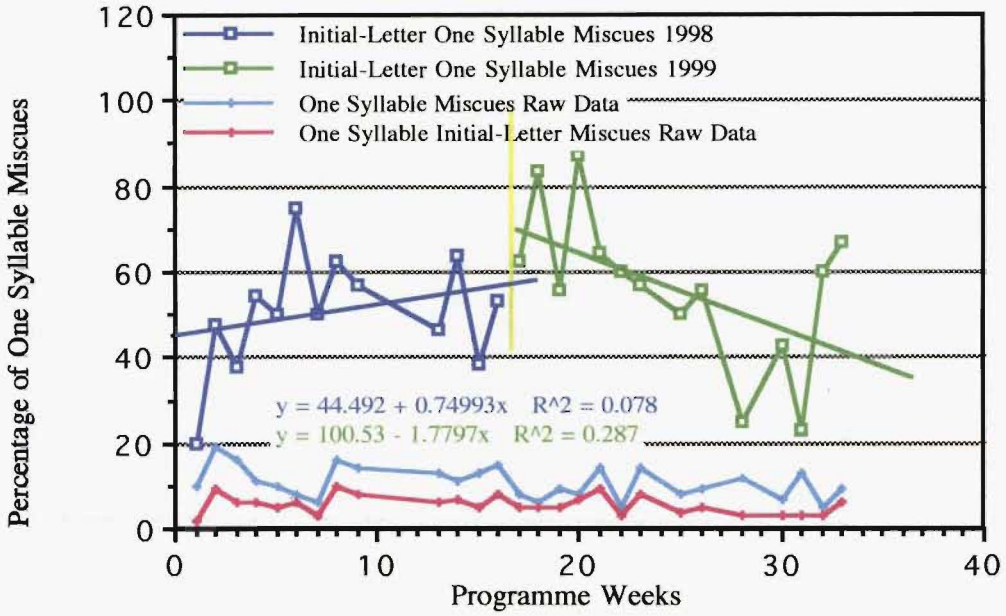

Figure 4.24. The percentage of one syllable miscues for which Garth used the initial-letter strategy.

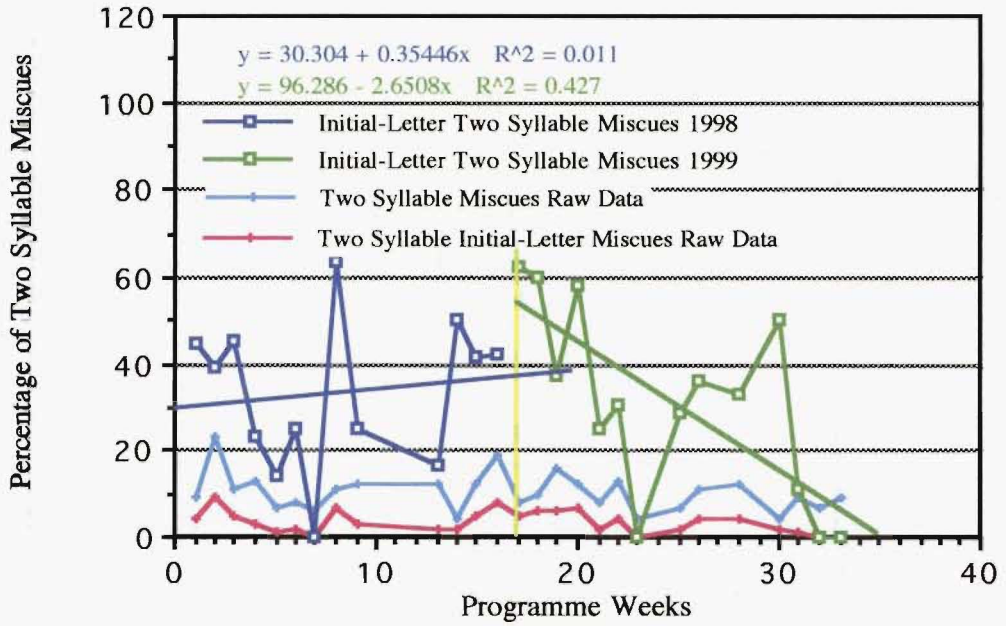

Figure 4.25. The percentage of two syllable miscues for which Garth used the initial-letter strategy.

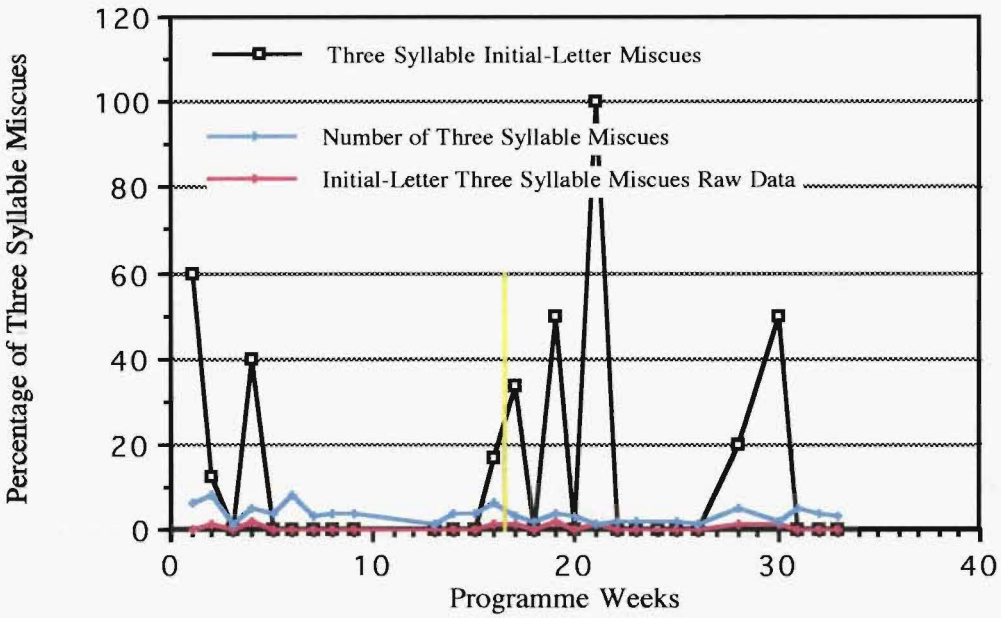

Figure 4.26. The percentage of three syllable miscues for which Garth used the initial-letter strategy.

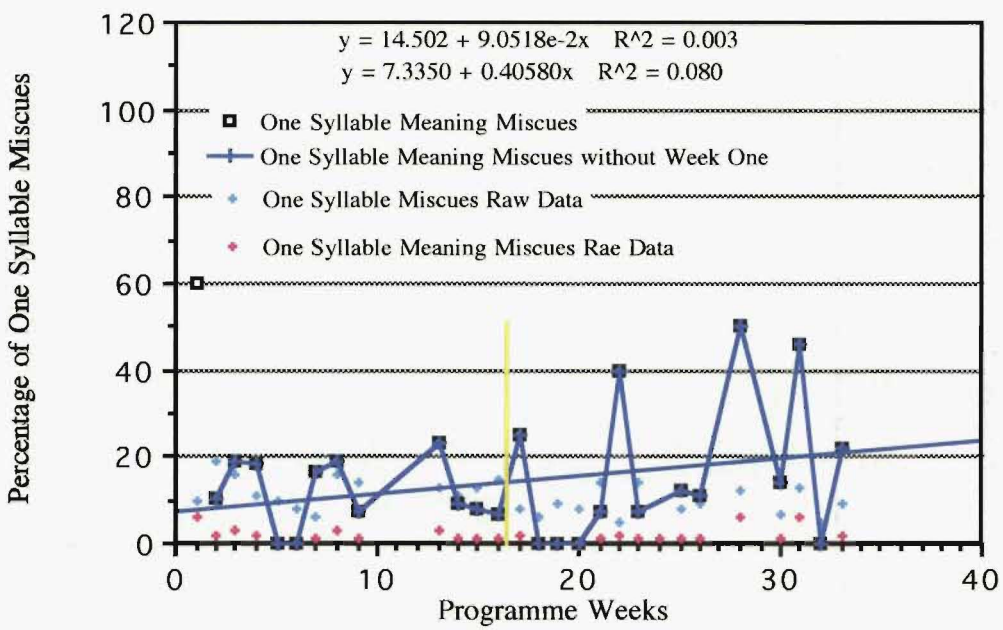

Figure 4.27. The percentage of one syllable miscues for which Garth used the meaning strategy.

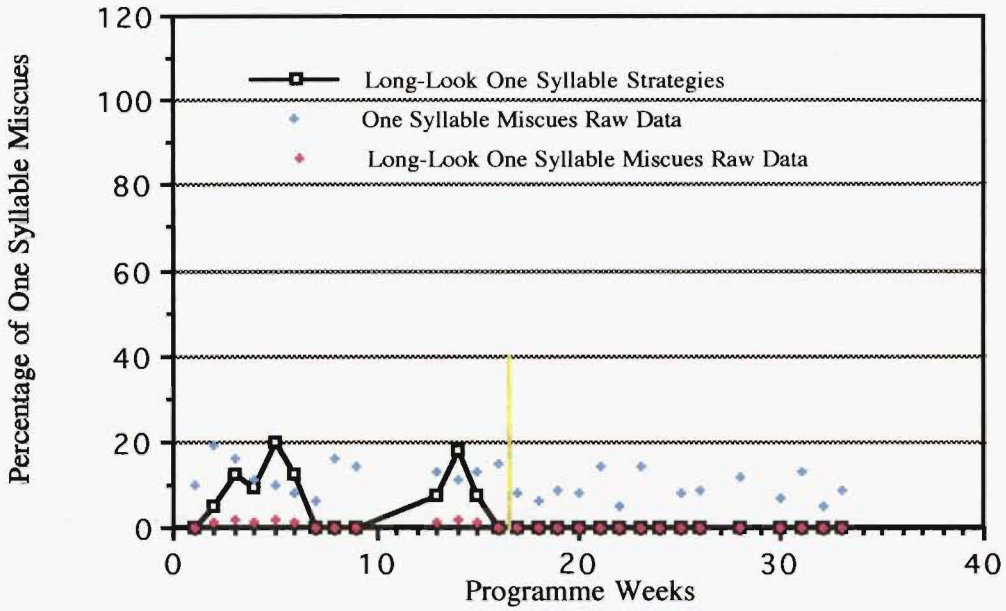

Figure 4.28. The percentage of one syllable miscues for which Garth used his long-look strategy.

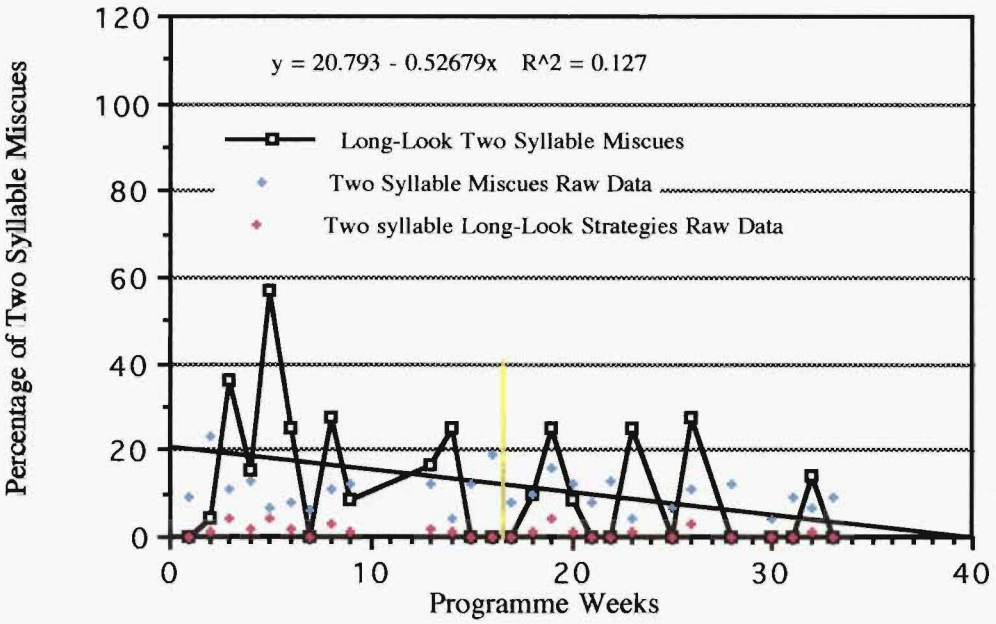

Figure 4.29. The percentage of two syllable miscues for which Garth used his long-look strategy.

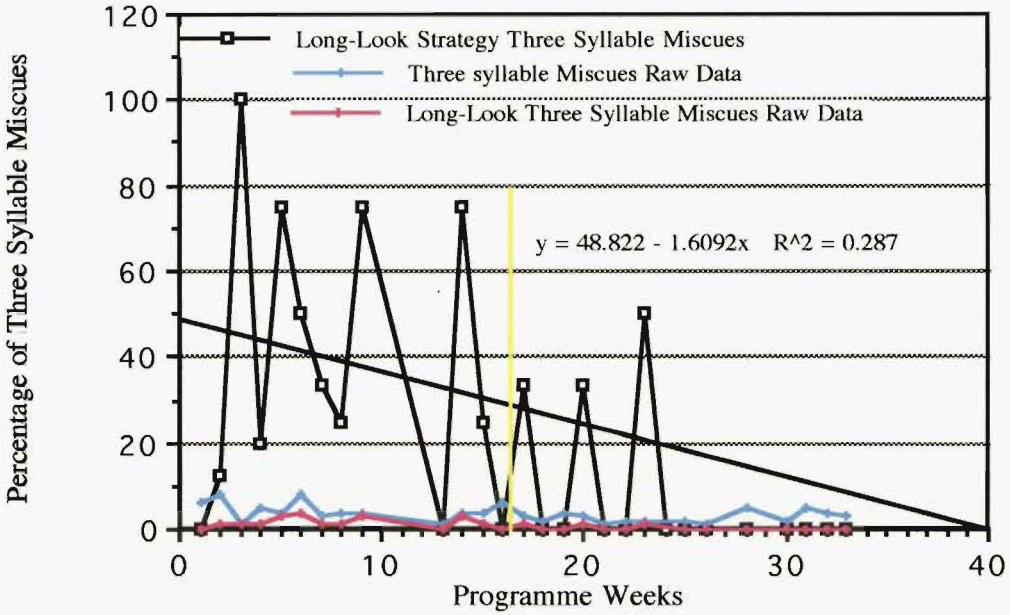

Figure 4.30. The percentage of three syllable miscues for which Garth used his long-look strategy.

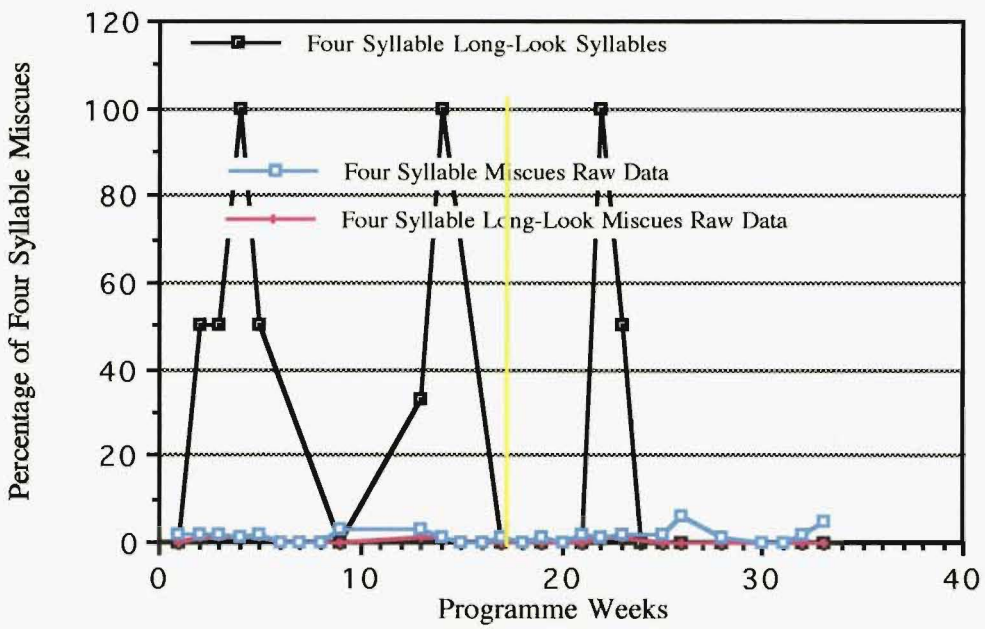

Figure 4.31. The percentage of four syllable words for which Garth used his long-look strategy.

coefficient shows that the systematic variance associated with the programme was moderate for one syllable words and moderately high for two syllable words.

Garth made small but persistent use of the meaning strategy for one syllable miscues (see Table 4.6 and Figure 4.27). The regression line depicts an increase in use through the programme. However, the regression coefficient shows that the systematic variance that is accounted for by the programme is relatively insignificant. Garth usually used this strategy for between 0% and 25% of his one-syllable miscues. In 1999, however, he used it for between 40% and 50% of his miscues on three occasions.

Garth also made small but persistent use of his long-look strategy for two and three syllable miscues (see Table 4.6). He used it for nearly one third of his four and five syllable miscues. He continued to use this strategy for two syllable miscues throughout the programme but used it in only two or three running records for miscues of three or more syllables in 1999 (see Figures 4.30 and 4.31).

Table 4.6. The relationship between the Garth's choice of strategy and the number of syllables in the miscue.

	1 syllable	2 syllables	3 syllables	(4+5) syllables
	Sounded miscues			
Mean %	12	47	61	65
Range	0 – 33	9 - 88	0 – 100	0 – 100
	Initial-Letter miscues			
Mean%	54	32	12	
Range	20 – 83	0 – 63	0 - 100	
	Long-Look Miscues			
Mean%	3	12	23	30
Range	Used in 1998 only.	0 – 57	0 - 100	0 - 100
	Meaning Miscues			
Mean %	16	3		
Range	0 – 60	1 - 2		
	Similar Word Miscues			
Mean %	6	∑ Words = 5	∑ Words = 3	
Range	1 – 2			
	Inventing Miscues			
Mean %	9	∑ Words = 9		
Range	1 – 4			

Note: ∑ Words = The total number of words with the number of syllables designated for that strategy.

In summary, Garth preferentially used the initial-letter strategy for one-syllable miscues, both the initial-letter strategy and the sounding strategy for two syllable miscues and the sounding strategy for miscues of three syllables or more. During 1999 his use of the initial-letter strategy for one and two syllable words declined.

In addition, Garth made small but persistent use of the meaning strategy for miscues of one syllable and in 1998 the long-look strategy for miscues of two or more syllables. In 1999 he rarely used the long-look strategy for miscues of three or more syllables.

The Initial-Letter Strategy

Examples of initial-letter, one and two syllable miscues are listed in Appendix I, Tables I1 and I2 respectively. Appendix I, Tables I1a and I2a give examples of miscues from these Tables in context.

These initial-letter miscues can be seen to be real words that have a very similar appearance to the text word. If the complete sample is viewed, it seems likely that Garth thought more words were very similar to the text word than a proficient reader would. Table 4.5 probably under-represents the number of words with similar appearance.

When the miscues are viewed in context (see Appendix I, Tables I1a and I2a), it can be seen that Garth predicted many of these words from the meaning of the preceding sentence. Again it seems that the values in Table 4.5 under-represent the number of words that Garth used prediction from meaning as a strategy for deciphering. An inconsistency in the meaning or the syntax sometimes prompted him to self-correct (see Appendix I, Table I1a: 16c and 16d).

These samples confirm the findings from the previous discussion on the characteristics of the initial-letter strategy. Garth used inaccurate and incomplete letter information to decipher text. His miscues were real words of similar appearance to the text word that had usually been predicted from the meaning in the passage immediately previous to the word. Because of his difficulties with automaticity and accuracy with letter information, he was very reliant on inconsistencies in the meaning or the syntax of the passage to perceive that he had miscued.

Summary of the Programme Induced Changes for Garth

Garth learned to read using the Department of Education's (1985) recommended strategies of repeated sampling of the text, predicting unfamiliar words from the meaning and then confirming or self-correcting. These results show that many of Garth's miscues were words with the same initial

letter and a similar appearance to the text word. In addition, many had been predicted from the meaning in the text immediately preceding the words. In other words, when Garth used the initial-letter strategy he was deciphering words in accordance with the strategies recommended by the Department of Education.

The current programme taught Garth phonemic awareness, letter-sound information including blends and phonograms, and the strategies to apply this knowledge. Garth had some knowledge of the sounding strategy when he began the programme and was already using this strategy, especially for multisyllabic words. However, he said that he had not been given the depth of knowledge about letter-sound information or the strategies to apply this knowledge previously.

As has been discussed in Chapter 3, the Neale and Burt scores provide a measure of a student's developing ability in word recognition using letter-sound information. His Neale reading accuracy scores and his Burt Word Recognition scores both showed accelerated progress with increases of three or more age equivalent years. At the beginning of the programme he had difficulty with common two syllable words. By the end of the programme he was deciphering multisyllabic words of three to five syllables.

Unfortunately his reading still remained slow and hesitant with frequent self-corrections. Garth's slow reading speed showed that he did not establish automaticity for letter information during the programme. His frequent self-corrections showed that he continued to decipher using incomplete and inaccurate letter information.

When reading journal text, which is characterised by a high number of frequently occurring one syllable words and fairly rich contextual meaning, Garth showed no overall change in his percentage accuracy scores for the fluency running record series. Nor did he show overall change in his percentage accuracy scores for the strategy running record series apart from a downturn in scores in the first term of 1999.

Further, the Neale and Burt assessments showed that Garth had reached an 11-12 year and a 13-year equivalent reading age respectively. Most of the journal articles were at a 10-12 year level for the fluency running record series and an 11-13 year level for the strategy running record series. When he was reading journal text in an instructional setting, Garth was already reading, albeit very slowly and with a very high rate of self-correction, at the levels he achieved during the programme for the Neal and Burt assessments.

During 1999 Garth began to change his relative strategy use as a result of the programme. He made more use of the sounding strategy especially for two syllable words, but also for three syllable words and less use of the initial-letter strategy for one and two syllable miscues. He made decreasing use of the long-look strategy. Garth had come into the programme already using the sounding strategy. As a result of his year's participation he appeared to have begun to replace the strategies he had been taught with the sounding strategy taught in the programme.

There were four indications in the results suggesting that Garth may have had difficulty integrating letter information with meaning to cue words.

- First was his use of the long-look strategy where he would look at the word, which can be interpreted as the letter information, and then rerun the sentence for the meaning. It seems that this strategy was an attempt on his part to integrate letter information with meaning.

- Second, the downturn and extreme variability of Garth's strategy running record percentage accuracy scores in the third teaching term were associated with his higher than usual use of the initial-letter strategy and low use of sounding. Garth appeared to be relying more heavily on cueing from meaning and using less letter information.

- Third, his Burt scores were markedly higher than his Neale scores at the beginning and end of the programme. The addition of the meaning cue appears to have depressed his Neale scores relative to his Burt scores. However, after the Christmas holidays his Neale score had gained on his Burt score. In fact his Burt scores had dropped through the second 1998 term when self-beliefs rather than sounding and its strategies were taught. This trend continued until after the Christmas vacation. It is likely that for his holiday reading Garth came to rely more heavily on the meaning cue. These results are in line with the results from his strategy running record percentage accuracy scores discussed above

- Fourth, 75% of his sounded miscues did not have meaning in their context. Garth appears to have been using letter information at the expense of meaning when he used the sounding strategy.

Garth as a Strategic Reader

Reading disability children, because of motivational problems and consequent lack of experience, fail to develop the range of cognitive strategies and metacognitive monitoring strategies that children of normal academic achievement use. They become passive learners (Stanovich, 1986, 1988; Wong, 1991).

Table 4.7 presents some of Garth's descriptions of his knowledge and application of strategies for reading unfamiliar words along with the monitoring strategies he used to determine if he was correct. Garth had no trouble expressing exactly what he did. His initial explanation, on the 24th June, of his word recognition strategies (e.g. "Look at the word --- if it is right") is a very accurate description of his apparent strategies for the words presented in context for the fluency running record series (Appendix H, Tables H1a – H4a) and for the initial-letter strategy examples (Appendix I, Tables I1a and I2a). His gradual assimilation and use of the strategies taught within the programme is apparent from his later descriptions. Garth was already an active strategy user at the beginning of the programme and enriched his strategy use from the teaching within the programme. At the end of the programme he stated that he used all the programme taught strategies (see Table 4.7).

Garth was also active in monitoring his attempts at word recognition and he often stated that he was looking at both letter and sentence context information. Garth was not the learned helpless reader postulated in the literature.

Garth's difficulty with attaining accurate letter information for the words he was trying to read has already been discussed above. He was aware of his problem and strategic in trying to minimize it. He eagerly adopted using a pen to help read more accurately. Although it did not appear to have any noticeable effect on his reading accuracy he described its value as follows:

"Just using my pen and running underneath them (the words) and sounding them out and I use the pen to put all the letters in order because when I look at the word I – sometimes my eyes mix up all the letters. ... the pen just sort of points to the letters."

Table 4.7 has two examples where Garth applied his strategic knowledge to determine a word; but inaccurately (wading/waddling, spectacle/spetulate). In discussion, Garth volunteered that he did not hear the words in his head as he read but saw three-dimensional pictures. He elaborated that it was helpful to him to hear the words and he often mouthed them silently or in a slight whisper. Garth's

explanations of the information he accessed when he was reading throws some light on the results previously discussed which suggested that Garth was having difficulty integrating letter information with the meaning cue.

Table 4.7: The cognitive strategies and metacognitive monitoring that Garth stated he used to decipher unfamiliar words.

Date	Cognitive strategies For Unfamiliar Word Recognition	Metacognitive Monitoring Strategies For Unfamiliar Word Recognition
24.6.98	'Say bits of words *x-c-i-t-e-ment*; read through the word *excited* --- *excitement* keep trying it; Ask' "Look at the word and see what it looks like and then say the sentence. Put in a word that I know that looks right and see if it is right. Then read on and see if it is right."	Right word if "it works in with the sentence or not." Wrong word if it "didn't sound right with the sentence". *The young explored* --- doesn't sound right.
26.10.98	Sound it out. Use a pen (to track along the letters in the word) Read on and see what would fit, or just leave it and go on	Doesn't make sense or doesn't look right. Word doesn't go with the letters. Then try and Figure it out again.
24.11.98	*Waddling:* sounded out to get 'waded' *Bulging:* sounded out changed u Sometimes reads back to get word that looks like that and fits that – has the same letters and order.	Read sentence and thought 'wading' but it doesn't look right because 'wading' has no l Doesn't make sense or look right then play with it. Try to figure it out. Change different letters.
18.2.99	Sound it out. Read and read back. *Spontaneous:* stared for a bit and it popped into my head	Makes sense looks right.
13.7.99	*Fascinated*: fas-kin-at-ed, fascinated, c & g, vowels in head. *Spectacle*: spec-tu-late, spec-tacle stress, sounding. Also uses beginnings and endings of words. Says he uses all the (taught) strategies.	Not Questioned.
20.10.99	*Phenomonon*: phen-om-en-on sounded it through changed the vowel sound. Needed to change stress. *Sophisticated*: so-phist-i-cated. Sounded it through. Changed the stress. Recognized the word. Changing the vowels, stress. Use the meaning, c & g sometimes if it doesn't sound right, Doesn't use pen any more, read on and go back, Go over it again.	Not Questioned.

Note: The examples of unfamiliar words in this table were words from the *Neale* texts the levels for which are given for the corresponding dates in Table 4.8. On the 20.10 99 Garth could no longer give the short vowels accurately. Instead he gave the sounds for /u/ /e/ /ee/ /oo/ /oo/ (but, get, feet, book, boot). In discussion with Garth it was decided that the vowels he had learned in Japanese had affected his learning of the English vowels.

If Garth did not hear the words in his head as he read, it is likely that building accurate letter-sound representations for reading would be very difficult for him. In other words, Garth had only very limited access to good letter-sound information when he read, and it is this lack of access to the necessary knowledge rather than his difficulties with metacognitive processing that were causing his problems. The fact that this programme with its emphasis on letter-sound and phonogram knowledge enabled him to make so much progress on the standardized tests adds support to this view.

Causal Attributions

Garth was asked to rate his reading ability in comparison with all other year 9 (or year 10 in 1999) readers. The results are presented in Table 4.8. Initially in the programme he rated himself as average or below but never at the bottom of his year. In the second half of the programme he rated himself as average or above. His assessment of his reading ability was unrealistic but he did have the self-belief that he could read as proficiently as others in his cohort.

Table 4.8. Garth's ranking of his reading ability in comparison with the other pupils in his school year.

Date	School Year	Silent Reading	Oral reading	Comprehension	Speed of Reading
22.6.98	9	4	2	3	4
3.11.98	9	3	4	2	4
15.2.99	10	2	3	1	3
13.7.99	10	2	1	1	3
20.10.99	10	3	2	1	3
		Garth's rating of his last year's (year 9) reading ability from his year 10 perspective as an indication of how he thought he had improved.			
13.7.99	9	3	4	1	4
20.10.99	9	4	3	2 (Can read more words.)	4

Note: Garth rated his ability on a scale of 1-5. The questions used to obtain this self-belief data are given in Appendix F, Question 6a.

At the selected dates listed in Table 4.9, Garth was asked to select an 'easy to read' and a 'hard to read' passage from the Neale Diagnostic Tutor. The results are presented in Table 4.9.

At the beginning of the programme, the easy passage that Garth chose would have had a difficulty level in Clay's hard text category. The easy passages at the termination of the programme were both at the bottom of the instructional level scores. The hard passage that he chose at the beginning of the programme was at a level so difficult for him that it was another level above the text where he had the maximum number of miscues that established his test ceiling.

Table 4.9. Garth's estimated percentage accuracy scores and causal attribution beliefs for the Neale Diagnostic Tutor passages that he had rated as easy or hard to read.

Date	E: H	N	% Acc	Know/Don't Know	Guess/Didn't Guess	Try/Didn't Try
24.6.98	E	3	86.3	3	3	2
13.7.99	E	6	90.8	1	5	1
20.10.99	E	6	91.4	1	No Hard Words 5	I Know Them All
24.6.98	H	5	—	1	4	1

Note: Garth's beliefs about his reading knowledge, and behaviours are rated on a 1 – 5 scale. Know = 1, Guess = 1, Tried Hard = 1. The questions for the causal beliefs are given in Appendix D. Know = know the best ways; E = easy; H = Hard; N = *Neale* level for the Diagnostic Tutor passages; % Acc. = The percentage accuracy score that Garth obtained when he read the alternate Form 1 or Form 2 passage.

A term after the programme had finished, Garth reported that his self-rated 'easy' Diagnostic Tutor passage had no hard words (see Table 4.9). Yet Table 4.7 lists examples of words in this passage that Garth had to sound through to determine their identity. He scored an accuracy rate of 91.4% on the equivalent Form Two passage. These results indicate that Garth had no conception of the easy, automatic, fluent reading that the proficient reader enjoys. For Garth, easy reading was an effortful activity involving the continual application of strategies to decipher the words. Garth must have believed reading to be an extremely difficult process. Yet he believed he could read the individual words and the whole page for this easy text.

At the beginning of the programme, Garth reported that although he tried hard to read the words he frequently did not know the best ways to decipher them and resorted to guessing (see Table 4.9). By the finish of the programme, he believed that he now knew the best way to read the difficult words, that he worked hard to read them and no longer guessed. When he was questioned about what had

been the most helpful aspect of the programme he said "the sounds --- and the strategies probably." This is borne out by his description of the strategies he used to read unfamiliar words discussed above.

A term after the programme had finished he thought there were no hard words in the Diagnostic Tutor passage because he had managed to read the words. If he could read the words, the passage was easy. Thinking about whether he tried or guessed was no longer applicable, even although he had had to sound words in that particular passage to read them. Garth's causal attribution beliefs showed that Garth initially believed that he lacked the knowledge to read words proficiently. As he gained the knowledge he applied it and appeared to believe that this effortful reading was the fluent reading that others enjoyed.

Table 4.10. Garth's estimated percentage accuracy scores and self-efficacy judgements for reading the passages from the Neale Diagnostic Tutor that he had rated as easy or hard to read.

Date	E: H	N	% Acc	Can Read Page/Can't Read Page	Easy to Read/Hard to Read
24.6.98	E	3	86.3	2	2
13.7.99	E	6	90.8	2	2
20.10. 99	E	6	91.4	3	2
24.6.98	H	5	—	4	5

Note: Garth's self-efficacy judgements about his reading ability were measured on a 1 – 5 scale. Can read = 1, Easy to Read = 1. The self-efficacy judgement questions are given in Appendix D. E = easy; H = hard; N = Neale level from the Diagnostic Tutor; % Acc. = The percentage accuracy score that Garth obtained when he read the alternate Form 1, or Form 2 passage. His causal attribution beliefs about his reading for these passages are given in Table 4.9.

When reading within this programme at least, Garth both stated and behaved as if he believed that effort and his growing knowledge of the best ways to read words would bring success. He reported he could read text that was very difficult for him (see Table 4.9 and Table 4.10). He believed he had control when he deciphered words. As a result of his positive beliefs about his ability and the effectiveness of the letter-sound knowledge and the strategies he was learning, he worked hard at applying them to decipher unfamiliar words. He was not the learned helpless reader (Licht & Kistner, 1986; Schunk, 1991) described in the literature. The result of his beliefs and his resultant efforts in applying his newly acquired strategies was the accelerated learning gains in his Neale and Burt scores.

Garth's Language Profile

Garth had an excellent vocabulary when he entered the programme (Table 4.11) and his percentile rank of 94%, assessed with the PPVT-R (Dunn & Dunn, 1981), was unchanged in the final assessments. His CELF-3 (Semel, Wiig, & Secord, 1995) language scores were more variable but, for the four subtests assessed, one of the two scores, at least, lay above the mean for his age. None of his language scores indicated any expectation of the sort of extreme difficulties with reading that Garth has experienced.

Table 4.11. Garth's standard scores for the Peabody Picture Vocabulary Test-Revised (PPVT-R) and selected subtests from the Clinical Evaluation of Language Fundamentals-Third Edition (CELF-3).

Peabody Picture Vocabulary Test — Revised

	1998		1999	
	St. Score	PR	St. Score	PR
	124	94	124	94

Clinical Evaluation of Language Fundamentals — Third Edition

Subtests.				
	9	37	11	63
Word Classes				
Formulated Sentences	11	63	7	16
Recalling Sentences	12	75	13	84
Word Associations	15	95	11	63
Rapid Automatic Naming	Errors: 0/3	Time: 79/65 secs:-	Equivalent Reading Age 10 years	

Note: St. Score = standard score; PR = percentile rank; secs = seconds.

His scores at the beginning and finish of the programme were centred around the mean for the Receptive Language subtest Word Classes and above the mean for the Expressive Language subtest Recalling Sentences. For each subtest, the two scores lay within the 90% confidence interval of each other.

In the Formulated Sentences, Garth was given a picture stimulus and a word it was mandatory to use and asked to make a sentence. His 1999 score dropped relative to his 1998 score. In the 1999 assessment, he failed to use the two words, 'however' and 'otherwise', as conjunctions although he had the meaning correct and had used them correctly in the 1998 assessment. One lapse in 1999 involved a confusion of the words 'either/neither'. Some of the difference between the 1998 score

and the 1999 score was attributable to the use of the verb 'to have' which involved more complex verb-plus-participle constructions than those that Garth had used in the previous assessment. An adolescent such as Garth has significantly less language experience than would be the case for a fluent reader. In addition, as discussed earlier, verbs were often read inaccurately thus inhibiting an 'ear' for good syntax. Such lapses in syntax might, on consideration, be expected and are likely indications of the influence of Stanovich's Matthew effect (Vellutino, Scanlon, & Sipay, 1997)

Garth's score for his 1999 assessment in the subtest Word Associations also showed a drop although the 1999 score was still above the mean for his age. Both the subtests where Garth had to provide language as words or sentences showed a drop in score. It may be that because Garth, now at high school in a mixture of special needs, or lower stream, subject based classes, no longer had the language rich environment of primary and intermediate school classes available to him. This resulted in a consequent loss of language skills.

Garth's results from the QUIL (Dodd, Holm, & Oerlemans, 1996) (see Table 4.12) are more revealing with regard to his reading difficulties. Garth could only identify if two words rhymed or not in 50% of the examples. At the beginning of the programme, he was fairly accurate at comparing two words to identify the position of similar syllables but he could not count the number of syllables in a word. Similarly, he could sometimes determine the position of a given phoneme in a word but he could not count the number of phonemes in a word or take off one phoneme to make another word (spin/pin). In other words, Garth had a phonological processing problem that prevented him from accurately identifying the syllables and phonemes in words. Such a phonological processing deficit would have had a causal effect in his reading difficulties by impairing his ability to form letter-sound associations (Bradley & Bryant, 1983; Gillon & Dodd, 1994; National Reading Panel, 2000; Stanovich, 1986). This in turn would have impaired word recognition and spelling skills. Garth's low non-word reading and non-word spelling scores (see Table 4.12) confirm that he did have difficulties with letter-sound knowledge.

In the first few weeks of the teaching programme, counting the phonemes in words was specifically taught. The difference in Garth's phonological processing scores for hearing rhymes and counting syllables and phonemes is apparent. The rest of the programme concentrated on teaching letter-sound associations, the reading of phonographs and strategies for applying this knowledge along with working to improve self-efficacy and self-beliefs about causal attributions. It can be seen from the constancy of Garth's scores for counting the syllables and phonemes in words that his results appeared to be very dependent on explicit teaching of these skills. A second session on these later in the programme would have been likely to be useful but time was always constrained.

Finally there were two further areas of difficulty. First, Garth volunteered that he could not hear the words he was reading inside his head when silent reading. Instead he saw three dimensional shapes. He said it was easier to read when he could hear himself reading and he often whispered or mouthed the words. He said he was faster at reading out loud. Garth needed to read aloud or mouth the words as he practised to develop his letter-sound knowledge.

Table 4.12. Garth's raw scores for the subtests of the Queensland University Inventory of Literacy (QUIL).

Queensland University Inventory of Literacy

Subtests	P/Sc	Raw Scores							
		1998				1999			
		15/6	27/8	29/10	23/11	22/2	22/4	27/7	19/10
Nonword Spelling	24	8	8	9	10	10	9	9	12
Nonword Reading	24	11	14	15	16	14	20	17	14
Syllable Identification	12	10	12		11			11	
Syllable Segmentation	12	0	9		12			9	
Spoken Rhyme Visual Rhyme	12	6	12		10			10	
Spoonerisms	20	14	15		20			15	
Phoneme Detection	12	7	11		9			12	
Phoneme Segmentation	12	0	7		9			7	
Phoneme Manipulation	10	1	7		6			7	

Note: P/Sc = possible score.

Second, although Garth was accurate in the Rapid Automatic Naming subtest of the CELF-3, he did self-correct three times. Some students with rapid naming deficits choose to name accurately but slowly. Some maintain their speed, unconcerned by their ensuing inaccuracies (Semel et al., 1995). Garth was one of the former. He was aware that when he read too quickly he became less accurate. "My eyes are going across the words too quickly."

His very slow time was consistent with that of a 10 year-old pupil rather than his 13 years. Wolf (1997) hypothesized that naming speed deficits in conjunction with phonological processing problems lead to the severest forms of reading disability. Further, if the naming speed deficit is not recognized then remediation is only directed to the phonological problems of the reader with little attention being directed to fluency and automaticity. Garth's results show an improvement in his

phonological processing and his letter-sound recognition. Fluency and automaticity were still severe problems when the programme finished.

Garth's Visual Difficulties

There were indications that Garth also experienced problems with visually processing print. His description of his problem was "I look at the word. I---sometimes my eyes mix up all the letters". It is likely that Garth was coping with this problem for the most part, but his strategy running record contains some isolated examples of the problem. In his miscues there are examples of letter inversions (n/u, b/p, p/d) and a letter reversal (b/d). There are also examples of reversed or confused letter order (was/saw, of/to, who/how, I want to/of what I, can/and).

When asked why he thought he miscued so frequently Garth said, "I read through the words too fast -- My eyes go through the word too fast." When his extremely slow rate of reading is considered, the difficulties he was having with visual perception and automaticity for recognizing letter information are very evident.

In conclusion, it can be postulated that Garth's continual problems with accurate letter information resulted from his difficulties with syllable and phoneme isolation which in turn may have been compounded by visual problems in determining letter orientation and letter order. These problems in turn led to inappropriate feedback on some strategy use and an over reliance on meaning cued strategies. His problems did not appear to result from inability to use strategies appropriately when he was in possession of all the relevant information, deficits in metacognitive processing abilities or maladaptive causal attributions. His inability to hear the words in his head as he read is likely to be related, and possibly in a causal way, to his phonological processing problems. His difficulties with fluency as a result of lack of automaticity in letter-sound recognition may, in addition, be compounded by a deficit in automatic naming speed ability

Garth's Story

Garth entered the teaching programme displaying very severe difficulties with word recognition. He did not possess the strategies to decipher words of more than two syllables. He had difficulties with accurately recognising letter groups, word endings and high frequency words that he had read accurately on previous occasions. His miscues were often words with the same initial letter and similar appearance to the text word and contextual meaning but some had only a similar appearance

or contextual meaning. His reading was halting and inaccurate. It was characterised by a very high percentage of self-corrections, often the result of reading and rereading words, phrases and sentences.

At the beginning of the programme Garth did not show any understanding of the easy fluent reading that normally achieving students enjoy. He chose as 'easy-to-read' text, passages that were very difficult for him to decipher. He made positive self-efficacy judgements that enabled him to tackle difficult text both in the programme lessons and independently at home.

When he entered the programme, his principal strategies for deciphering unfamiliar words were the sounding and initial-letter strategies. Although he had entered the programme with an understanding of how the sounding strategy worked, he lacked a comprehensive knowledge of letter-sound associations or a range of strategies to apply them. When he used the sounding strategy he was persistent in his attempts to decipher the word. He knew he should use the meaning and the syntax of the passage to metacognitively monitor his attempts.

At this time, Garth's beliefs about his reading ability ranged from slightly optimistic to very optimistic. He believed he was average or below at silent reading, reading comprehension and speed of reading and above average at oral reading. But he thought that he frequently lacked the knowledge to decipher words and therefore often resorted to guessing.

Garth's initial assessment showed that his word recognition difficulties were not the result of language difficulties. His PPVT-R score for vocabulary was high, three of his CELF-3 scores, Formulated Sentences, Recalling Sentences and Word Association, were above the mean for his age and the fourth Word Classes was in the average range. He had a Progressive Achievement Test of Listening Comprehension score that was above the mean for his age.

Garth's initial assessment QUIL non-word reading and spelling scores showed that he had gained some knowledge of letter-sound associations prior to the programme, although his scores were far below the level that would be expected for a normally achieving adolescent reader.

Garth had a cluster of difficulties that were likely to have contributed to his severe difficulties with word recognition. He had phonological processing difficulties. He had difficulty identifying rhymes, could not segment syllables and could not segment or manipulate phonemes. In addition to his phonological processing difficulties, he had visual difficulties with letter order and with letter orientation. He did not hear an internal voice as he read silently, he had difficulty integrating letter-

sound information with contextual meaning as he read and he had difficulties with rapid automatic naming.

Garth entered the programme with very poor word recognition skills, but average listening comprehension and average or better language scores. His word recognition difficulties appeared to be the result of a cluster of difficulties, which included phonological and visual processing problems together with difficulty integrating letter-sound and contextual meaning information. His self-beliefs about his reading ability ranged from slightly optimistic to very optimistic. He made positive self-efficacy judgements that enabled him to read difficult text. He believed that the sounding strategy was an effective strategy but that he often lacked the ability to apply it and consequently guessed. As a result of his positive beliefs about his ability to read and the effectiveness of sounding, he was often strategic in tackling difficult words and knew to metacognitively monitor his efforts. His high, although very variable, self-correction rate for the sounding strategy was the result.

During the programme, Garth's beliefs about his ability in silent reading, comprehension and reading speed became more positive. After an initial decrease, his beliefs about his oral reading ability became more positive. He maintained his positive self-efficacy judgements that allowed him to read difficult text. By the second half of the programme, he believed that he had average or above ability at reading.

As a result of the programme, Garth came to believe that he had the knowledge to decipher unfamiliar words and that he always tried hard to decipher the difficult words and didn't guess. Garth believed in the effectiveness of the sounding strategy.

As a consequence of his beliefs in his ability and in the effectiveness of the sounding strategy, Garth came to use it fairly consistently for words of four or more syllables. He made increasing use of it for words of two and three syllables. He was persistent in applying it to difficult words. He learned to metacognitively monitor his use of this strategy and to have the flexibility to change sounding strategies when he perceived that his initial attempts were unsuccessful. He learned to use all the strategies he was taught.

Teaching phonological awareness improved Garth's ability to hear rhymes; to identify and segment syllables; and to identify, segment and manipulate phonemes. These skills would have enabled Garth to understand letter-sound associations more readily. With this understanding, his increasing use and his resulting increasing proficiency in using the sounding strategy, Garth became more proficient at reading two syllable words. He also learned to apply his sounding strategy to words of three and more syllables. This progress was reflected in the accelerated progress his Neale and Burt scores

recorded, gains of three and three and a half age equivalent years respectively by the end of the year-long programme.

In contrast, no overall gain was recorded in reading accuracy during the year for either the fluency or the strategy running record series. Reading journal text, with its many one syllable, high frequency words and richer contextual meaning, Garth continued to frequently use the initial-letter strategy.

But his running record scores show that his use of the initial-letter strategy was associated with a high number of miscues. After the Christmas vacation Garth initially increased his use of the initial-letter strategy. This increase was associated with greatly increased variability and decreased percentage accuracy in his reading scores. But during the programme, Garth increased his beliefs in his ability to read and increased his ability to use the sounding strategy. As a consequence, after this initial increase in the initial-letter strategy, during the rest of the two 1999 terms Garth showed an increasing use of the programme taught sounding strategy and a decreasing use of the initial-letter strategy. This change in strategy use was associated with a decrease in the variability of the reading accuracy scores and an increase in the percentage accuracy uncorrected and self-corrected scores.

To summarise, Garth increased his already fairly positive self-belief in his reading ability during the programme and maintained his good self-efficacy judgements that allowed him to read difficult text. He was a mastery orientated learner. He believed that he had the ability to use the programme taught knowledge and strategies and that they were effective. He applied them with increasing consistency to words of two or more syllables as the programme progressed. He was persistent in his attempts to decipher words. He learned to metacognitively monitor his sounding strategy use and developed the flexibility to change his sounding strategies where necessary.

As a result of his increased letter-sound knowledge and his increasing consistent, persistent and flexible use of the sounding strategy, his Neale and Burt scores for reading achievement showed accelerated gains. These were assessments that tested increasing ability to decipher words with more syllables and less frequently encountered letter groups, that is, the knowledge and strategies that the programme taught. No overall gain was recorded for the two assessments using journal text, which incorporated many one and two syllable words and richer contextual meaning, for which Garth made high use of his initial-letter strategy; a strategy that was associated with a high miscue rate.

These results indicate that the programme was successful in improving Garth's word recognition ability for unfamiliar words. However there was a need for the programme to address Garth's lack of reading accuracy when he used the initial-letter strategy for deciphering one and two syllable high

frequency words. Three half-hour lessons each week for a school year did not provide sufficient teaching and reading time to enable Garth to become a proficient reader.

CHAPTER 5

Case Study 2: Mark

Mark was a 14-year-old, Year Ten adolescent when the teaching programme began. The school's Progressive Achievement Test of Listening Comprehension (Reid, Johnstone, & Elley, 1994) assessment gave an age percentile rank of 56 and an informal listening comprehension test, obtained by reading Mark the Neal (1988) Form I passages that were above his reading ceiling, gave a listening comprehension, equivalent age score of 12.0 years (see Table 2.1). Comparison with Mark's Reading Accuracy Neale equivalent age score of 8.9 years shows that Mark fulfilled the programme criteria. His extremely poor word recognition level was preventing him from achieving his likely reading comprehension potential.

In 1998 Mark was placed in one of two Year Ten special needs classes. Class materials for this class were selected to be at a 10-year age equivalent level. In 1999 there were no special needs Year Eleven classes although there was an alternative English class. Mark was admitted into School Certificate classes for English and History. In March of 1999, his History teacher informed me that he did as well as any of the other class members at sorting out the main ideas of a passage in a class exercise. However, in May he had difficulties with the school exams. This was not surprising. As a member of the special needs class in Year Nine and Year Ten he had not received the previous teaching and experience of his classmates in understanding and answering exam questions.

Mark's Father was a diesel mechanic and ran a workshop for a large construction company. His Mother was a machinist and was currently employed sewing jeans. Both of Mark's parents said that they read. His father read Readers Digest, science fiction and enjoyed authors such as Wilbur Smith, Alistair McLean and Harold Robbins. His Mother was not a great reader but enjoyed Mills and Boon novels and woman's magazines. The family owned a full set of encyclopaedias and several dictionaries.

Mark was read to as a preschooler, mainly from Golden Books. His Father said Mark liked Richard Scary but not Dr Seuss as he didn't like "all the rhymes". His father helped him extensively with his homework through primary school.

Mark spent his free time at home shut up in his bedroom playing with his play station or watching television. He did not read much but did learn his road code and passed the test during the programme.

Mark was not a very communicative adolescent. He answered most questions with terse single clause sentences. Many of his answers consisted of statements like "I dunno". His white school card had the following observations from his junior class teachers: he "doesn't listen to instructions" and has a "minimal attention span". In his middle primary school years, he had mood swings, could become belligerent and was easily aroused to anger. He was anxious to hide the areas of non-achievement such as reading and spelling. By intermediate school his white card stated that he required remediation in all areas.

His Father said that Mark had received reading recovery. His Mother was unsure. Mark continued to receive one-on-one reading instruction through primary and intermediate school. He had received some teaching in phonemic awareness and letter-sound knowledge as part of his Year Nine classroom programme.

Mark's Reading Programme

Mark received the reading programme described in Chapter 2. He was not taught any additional cognitive strategies. However, he did not cope well with learning to verbalise the metacognitive strategies, "Is this working?" and "What strategy would work better?". As there was a high teaching content involved in teaching the phonological processing skills, the letter-sound knowledge and the strategies to apply this knowledge, Mark's programme focussed on these. Although he was taught the full range of change strategies and how to apply them, teaching the verbalisation of the metacognitive strategies was not emphasised.

Mark's Reading Profile

Standardised Assessments

Mark showed an accelerated gain of slightly more that 2.5 years in his Neale assessment scores (Figure 5.1) by the end of the reading programme. He reached a final score of 11.5 age equivalent years one term after the close of the programme. The regression line accounts for a very high 84% of the variance.

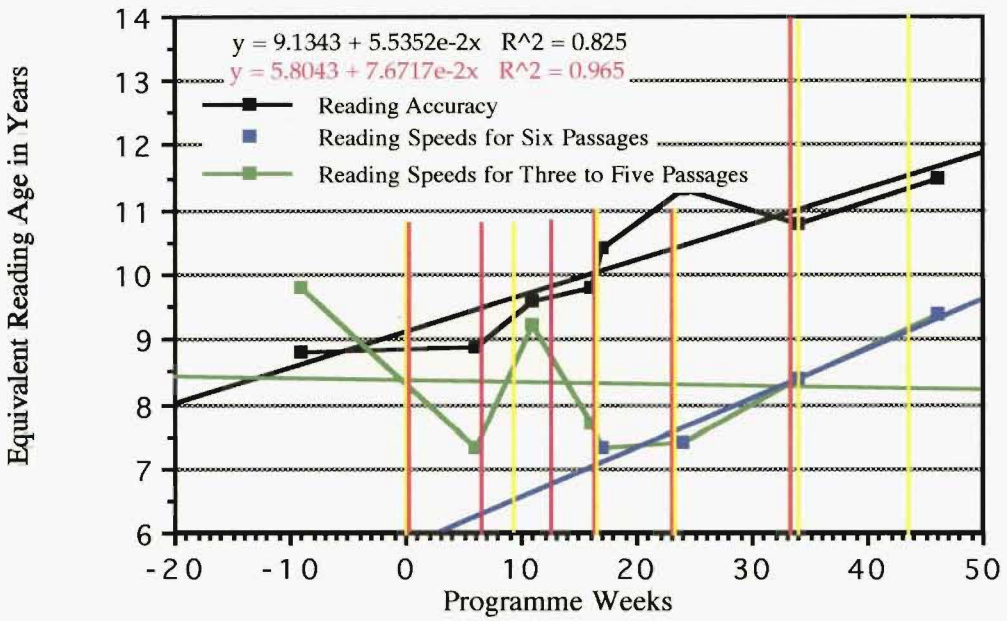

Figure 5.1. Mark's Neale Reading Accuracy and Reading Speed age equivalent scores

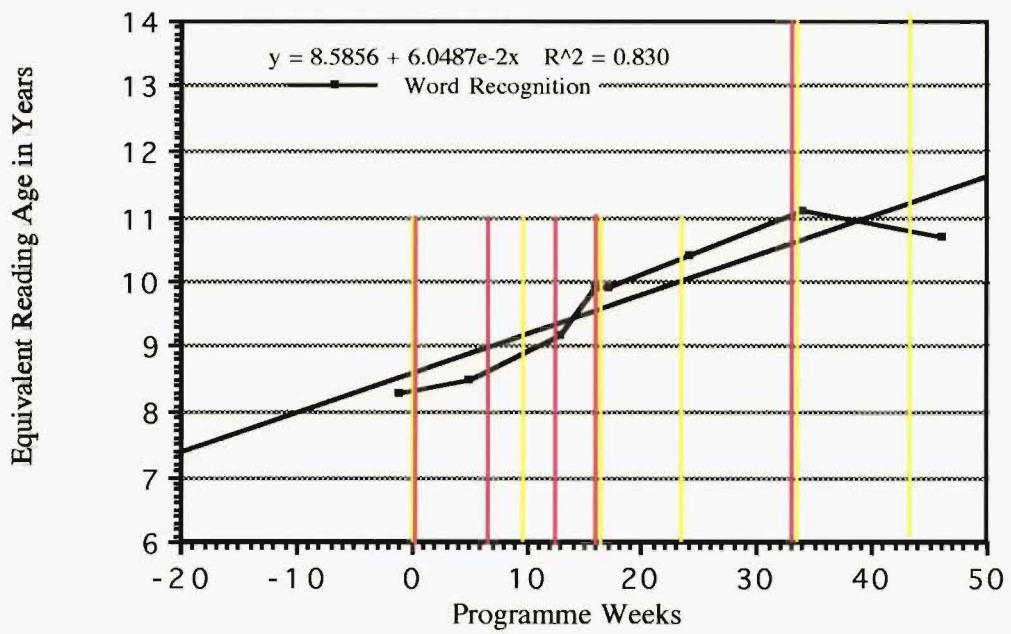

Figure 5.2. Mark's Burt Word Reading age equivalent scores.

These scores reflected Mark's increasing ability to read words containing more syllables and less easily recognised letter groups. His initial assessment records not only his inability to read two and three syllable words (desert, required, obtained) but also his difficulties with accurate letter-sound representations (*pl*ace/*pal*ace, buck-*led*/buck*led*, no*s*ed/nu*r*se, re*tur*ned/re*trea*ted) and common word endings (following/followed).

At his final assessment, he was able both to read many four and five syllable words (intermediate, accomplished, magnificently) and to recognise some of the more unusual spelling patterns (calm, undaunted, assault). However, difficulties with recognising all the syllables in a word (necity/necessity) and lack of accuracy in working through the syllables of words (changed/challenged) were still in evidence.

Mark's Burt (1981) (Figure 5.2) assessment scores recorded an accelerated gain of nearly three equivalent reading years in word recognition by the end of the programme. The programme-explained variance accounted for a very high 83% of the variance in his scores.

As with his Neale scores, these steady gains reflected his increasing ability to read words with more syllables. His initial Burt assessment records that at the beginning of the programme he could read most of the two syllable and one or two of the three and four syllable words (carry, village refrigerator). He had difficulties with accuracy when deciphering letter group information (no/now, expi*re*/explo*rer*) and recognising more commonly encountered letter groups (exp*ire*/explo*rer*, quick/quick***ly***).

By the finish of the teaching programme, Mark could read many multisyllabic words (terminology, microscopical, atmosphere) and words with more difficult letter representations (serious, encyclopaedia). As in the Neale assessment, consistent accuracy with letter information remained a problem (scrabble/scramble, knowledge/known). A term after programme completion, increased inaccuracies with common letter groups such as ed (commence/commenced, exhaust/exhausted) were indications of a decrease in accuracy skills and an indication that automaticity with letter group recognition for many frequently encountered letter groups had not been achieved.

His Neale and Burt scores showed similar gains in equivalent reading age. These gains show that Mark had increased his knowledge of letter-sound representations and strategies for word recognition during the teaching programme. His reading speed scores (Figure 5.1) for the assessments that included the full six assessment passages, measured a gain of slightly over two age equivalent years

but his final fluency score a term after the close of the programme was still only 9.4 years. Such slow reading speeds and the continued difficulties that Mark had with accurately deciphering frequently encountered letter groups add further evidence that this knowledge was not yet automatic

To summarise, these standardised assessment results from both the Burt and the Neale show that for Mark the programme was very successful. He had made accelerated progress with developing an increasing ability to decipher multisyllabic words as the teaching programme progressed. The fact that most of his Neale scores were slightly higher than his Burt scores suggests that Mark used context to aid his word recognition skills.

However, at the end of the programme automaticity in recognising letter groups, syllables and words remained a problem leading to low fluency scores along with continuing, and possibly increasing, inaccuracies in word recognition after programme completion.

Weekly Fluency Running Record Assessments

Mark read 10-12 year and 11-13 year age equivalent passages from Level Four New Zealand journal text for weeks 1-8 and 11-13 respectively (see Figure 5.3). He would have been aware that speed of reading was a focus of this assessment series as each reading was timed.

Table 5 1. Mark's percentage accuracy and reading speed means for the weekly fluency and strategy running record series.

Assessment Name	Programme Week Numbers	Mean
Fluency RR % Acc.Graph	1-32	94.4%
	1-16	94.4
	17-32	94.4
Fluency RR Fluency Graph	1-32	56.9 w/m, RA 8.5 y
% Acc Strategy RR Uncorrected	1-33	91.8 %
	1-16	91.0 %
	17-33	92.7 %
% Acc. Strategy RR Self-Corrected	1-33	94.8%
	1-16	94.2 %
	17-33	95.6 %

Note: % Acc. = % Accuracy; Uncorrected = % accuracy when all stumbles and miscues are counted before self-correction; Self-Corrected = % accuracy after self-correction; RR = running record; w/m = words per minute; y = age equivalent years; RA = Reading age equivalent.

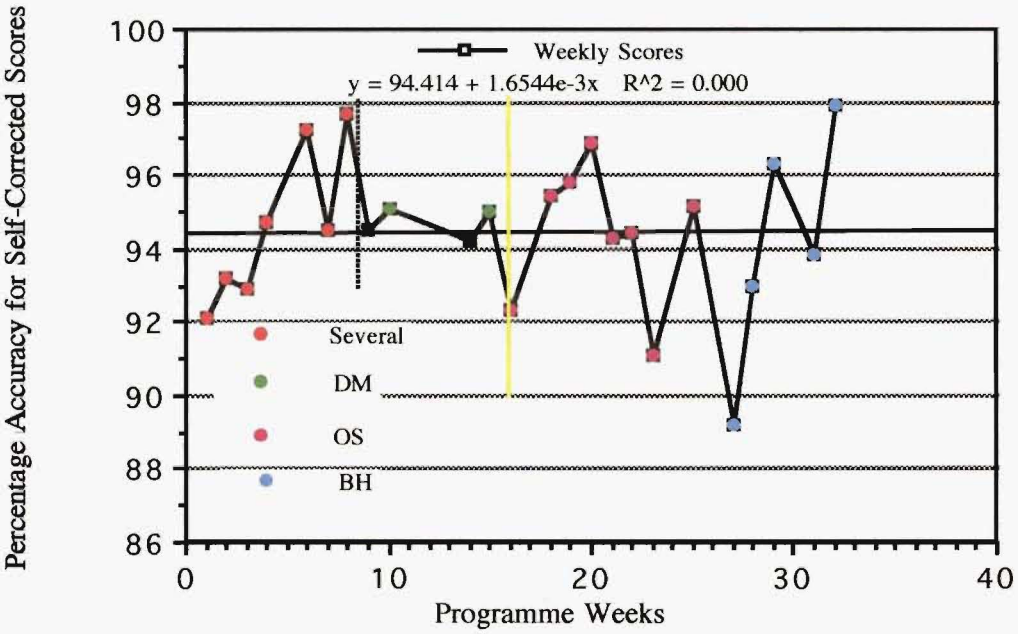

Figure 5.3. Mark's weekly self-corrected percentage accuracy scores for the fluency running record series.

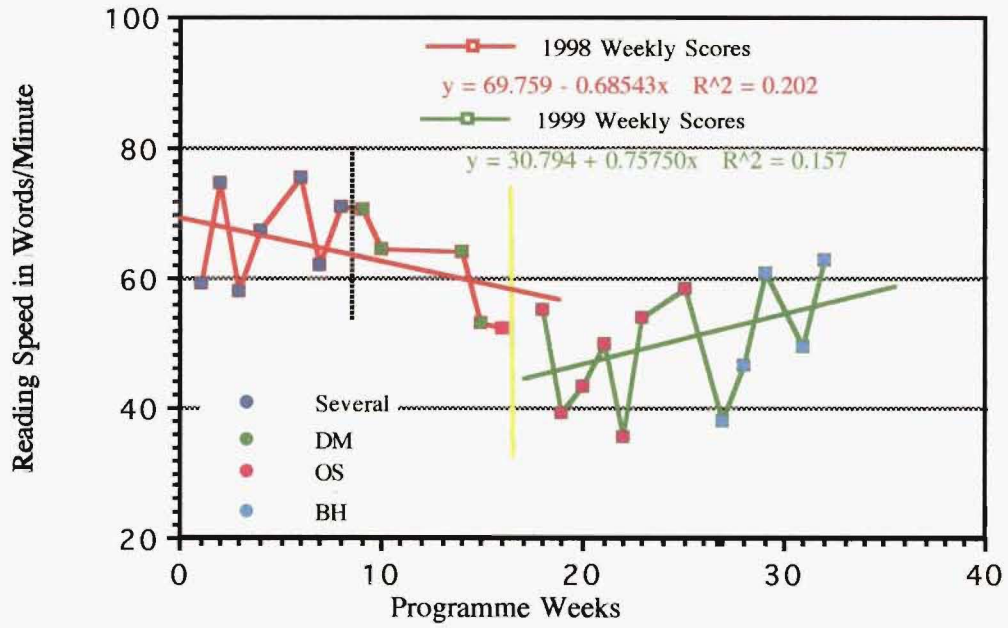

Figure 5.4. Mark's weekly reading speed scores for the fluency running record series. The key to the journal article initials is given in Appendix G.

Mark's percentage accuracy scores were extremely variable with most lying between 90% and 98%. His scores ranged through Clay's (1985) instructional text category into her easy text category. His mean score of 94% lay in Clay's instructional text category (see Table 5.1). The horizontal regression line shows that for this fluency series of assessments, when Mark was reading under pressure from the clock, there was no systematic change in his scores as a result of the programme.

The results show that, although there was no overall change in percentage accuracy as a result of the programme, there were different score patterns associated with different journal articles (see Figure 5.3). The journal article *Dear Mum* (DM) has a relatively simple story line and the level of reading difficulty for word recognition appears to be fairly constant throughout the article. The consistency of his accuracy scores probably reflected the fact that Mark found it easy to access contextual cues in the text for word recognition.

Oil Spill (OS) on the other hand is a more technical article and the subject matter was likely to have been more difficult for him to comprehend. This will have made it more difficult to make use of word context for word recognition. Week 23 has a lower score. Inspection of the miscues for week 23 reveals that Mark frequently miscued with words that looked similar to the text word (twelve/twenty four, nature/natural). The pattern of miscues for this passage was no different to that for other passages.

The Death of Ben Hall (BH) is a poem and Mark had initial difficulty with this unfamiliar genre. In this poem the meaning is obscured by the genre making cues from word context less accessible to Mark. His increasing ability to cope with the genre is reflected in his rising scores. The last, high *Ben Hall* percentage accuracy score of 98% is for a prose article giving background to the content of the poem. The article had a simple story line and a straightforward vocabulary.

Mark's reading speed was very variable in the first weeks of 1998. During these weeks he was reading 10-12 year journal articles (see Figure 5.4). His scores ranged between 58 words/minute (8.5 years) and 75 words/minute (10.1 years). In the second teaching term of 1998, on more difficult 11-13 year journal text, his reading speed decreased from 70 words/minute (9.7 years) to 52 words/minute (8.0 years). The regression coefficient shows that the negatively sloped regression line has a moderate systematic relationship to the programme.

During 1999 his reading speed improved from scores of 40 words/minute (6.9 years) or less to scores ranging from 50-60 words/minute (7.8 - 8.7 years). But Mark's reading speed was more variable,

from week to week, in these third and fourth programme terms. The regression coefficient reflects this variability and shows that the regression line has a relatively insignificant systematic relationship with the programme.

Comparison of the patterns of the scores in Figures 5.3 and 5.4 reveals that only for *Ben Hall* is there a consistent relationship between accuracy scores and reading speed scores. For most articles there seems to have been little relationship.

The very slow reading speeds and the variability in the week-to-week scores for this fluency series support the data from Mark's Neale results and the contention that he did not improve his automaticity for deciphering letter information during the programme.

Examples of Miscues

A scan of the miscues in the frequency running records shows that many of the miscues through the series had the same initial letter as the text word and were of similar appearance. Miscues resulted from inaccurate deciphering of the letter information (racing/raging, riding/righting) and inaccurate recognition of common word endings (coasts/coast, capsize/capsized, stuck/sticking).

Several groups of miscues were examined. These miscues involved pronouns, tense, contraction of two words and the similar word group of/from/for/form.

- Appendix J, Table J1 lists Mark's pronoun miscues and Appendix J, Table J1a presents examples of these miscues in their context. The examples were words of similar appearance to the text word that he had predicted from the meaning of the preceding text (see Appendix J, Table J1a). The possible exception was the week 29 example which may have been cued only for its similar appearance to the text word.

- Mark's miscues involving tense are listed in Appendix J, Table J2. Sometimes Mark replaced a past tense word with the present tense and sometimes the present tense with the past. Some of the miscues can be seen to have been predicted from the preceding context (see examples 2a, 2b, and 15).

  There was little self-correction for this group of miscues perhaps indicating that Mark was rarely aware of any inconsistencies in syntax. Of interest is the very immature grammatical miscue keeped/keep/ (see Appendix J, Table J2a, example 14a). Its presence suggests that Mark did not have a well developed knowledge of syntax.

- Miscues involving two-word-contractions are presented in Appendix J, Table J3. There was the continual confusion 'well/we'll' where Mark apparently failed to discriminate the apostrophe. That these miscues were not always self-corrected further supports the contention that Mark did not have a well developed sense for grammatical construction. There were examples where he failed to discriminate the contraction letters on the end of words (would/wouldn't, could/couldn't) and some contraction miscues appeared to be the result of verb tense confusion (don't/didn't, didn't/don't).

  Contraction miscues had disappeared from Mark's reading miscues in 1999. However, a scan of the texts read during that time revealed that these texts did not contain contractions.

- Appendix J, Table J4 lists the miscues involving the similar word group of/for/from/form. There were only six such miscues. Of the three examples of these miscues which were not grammatical in their context only one was self-corrected (see Appendix J, Table J4a). These miscues added further evidence that Mark was often not aware of grammatical sentence construction. The example for week 16 (see Appendix J, Table J4a) demonstrates how meaning can be changed by such miscues.

These results show that Mark read using incomplete and inaccurate letter information. His miscues were often words of similar appearance to the text word and cued from the context in the preceding text. They add further evidence to the previous contention that Mark lacked automaticity for deciphering letter information. Further, there were several examples of miscues which showed Mark had a poor knowledge of grammatical construction.

Weekly Strategy Running Record Assessments

Mark read 11-13 and 12-14 year age equivalent school journal texts for weeks 1-8 and 9-33 respectively (see Figures 5.5 and 5.6). The emphasis in this series was on the strategies that Mark used to decipher unfamiliar words. As Mark was questioned about the strategies he had used at the end of each reading, he would have been well aware of the emphasis of this series of assessments.

All but one of Mark's 1998, uncorrected scores lay between 88% and 95% (see Figure 5.5). Although there were initially some scores in Clay's (1985) hard text category, most of Mark's scores lay in her instructional text category. Inspection of Figure 5.5 shows that, apart from two lowered scores for weeks 7 and 13, the regression line for Mark's uncorrected strategy series scores showed a small but

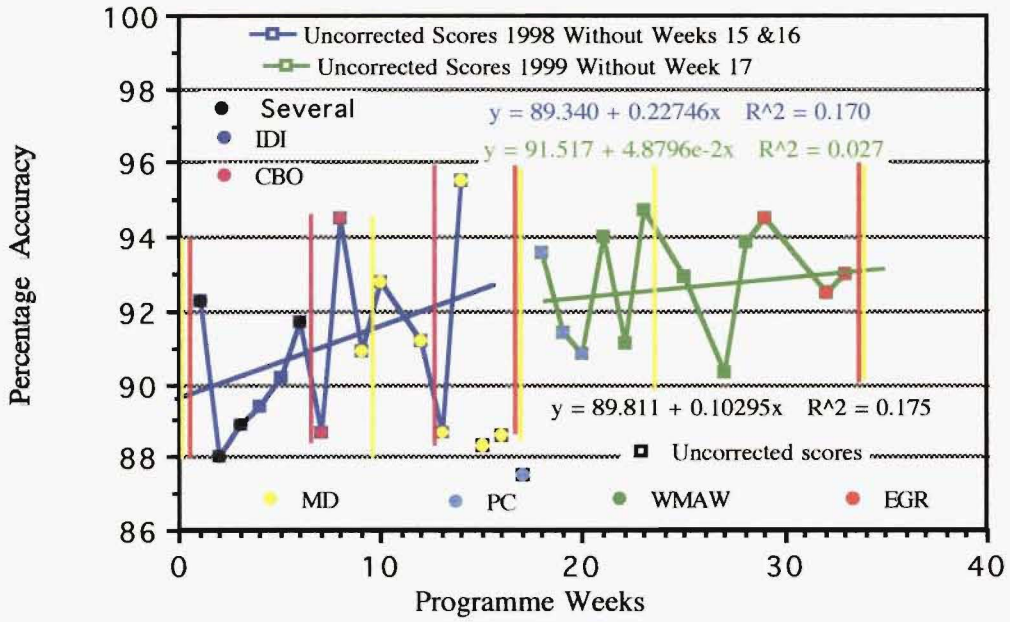

Figure 5.5. Mark's uncorrected weekly percentage accuracy scores for the strategy running record series.

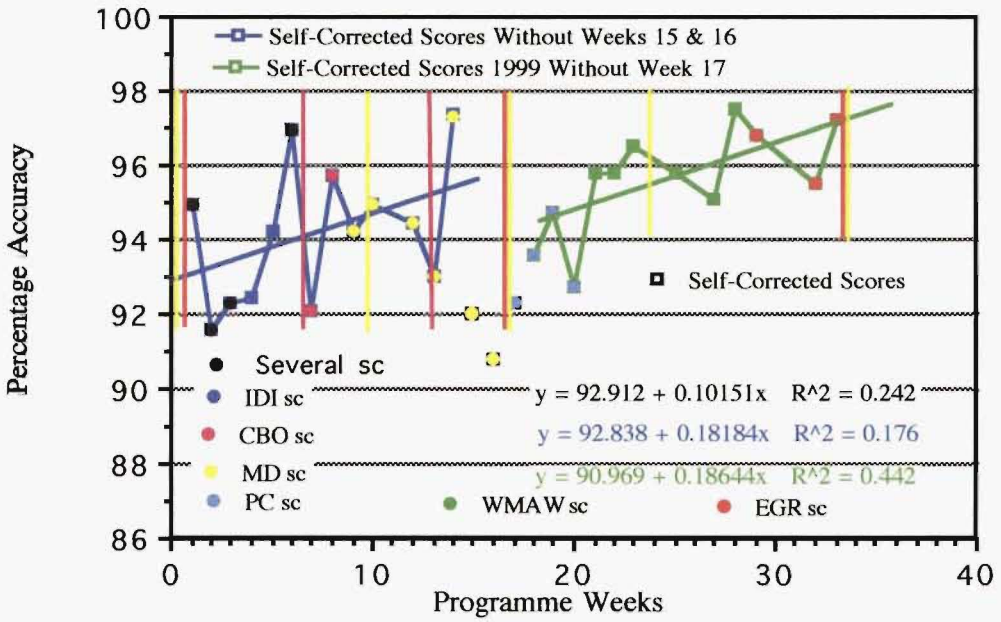

Figure 5.6. Mark's weekly self-corrected percentage accuracy scores for the strategy running record series.

steady gain of 3.5% during 1998. The regression coefficient shows that the programme accounted for a moderate amount of the variance.

During 1999 variability of the scores increased and the regression line recorded an overall increase of only 1%. This increase, as can be seen from the regression coefficient, was of no significance as it was less than the difference between many of the week-to-week scores.

Self-correction lifted Mark's mean 1998 and 1999 scores by 4% and 3% respectively (see Table 5.1). During 1998 most of his self-corrected scores lay within Clay's instructional text category with an occasional score lifting into the easy text range (see Figure 5.6). In 1999, after four initial weeks, all of Mark's self-corrected scores lay within Clay's easy text range. However, given the high self-correction rate, this was not the easy text category known to the fluent reader with good automaticity for letter information. Reading for Mark remained a slow and difficult process.

The regression lines for the self-corrected scores show an increase in reading accuracy of 3% in 1998 and again in 1999 (see Figure 5.6). There was some week-to-week variability in Mark's self-corrected scores during 1998. The regression coefficient shows that the programme accounted for a moderate amount of the variance. In 1999 the regression coefficient reflects reduced week-to-week variation and shows that the programme accounted for a moderately high amount of the variance.

Of interest are the lowered scores for weeks 15-17. It seems that, with the approaching Christmas holidays in 1998 and immediately after the holidays in 1999, Mark failed to put his usual effort into deciphering and these scores are the result. That his scores could drop so is an indication of the effort Mark found it necessary to apply in order to decipher the texts in this series of assessments.

The mean self-corrected scores are the same for the fluency and strategy running record series (see Table 5.1). A closer inspection reveals that the mean score for the 1998 strategy series is the same as that for the fluency series. The mean score for the 1999 strategy series is 1% higher than that for the fluency series.

To summarise, when the emphasis of the assessments focused on reading speed, Mark's self-corrected scores remained very variable throughout the programme and showed no overall improvement. A change of assessment emphasis to the programme taught deciphering strategies led to decreasing variability between week-to-week scores along with increased and improving reading accuracy, even though the text was more difficult.

Strategy Use for Word Recognition

Relative Proportional Use of Each Strategy

Mark's strategy use was analysed in order to gain a better understanding of his reading behaviours (see Table 5.2). The categories previously described for Garth in Chapter 4 were employed. Mark had used the sounding strategy for half of his miscues. He was already using this strategy at the beginning of the programme and during 1998 his use varied considerably from week-to-week within a range of 20% to 60%. The slight gain of 1% was of no consequence in comparison with such week to week variation. This is borne out by the regression coefficient which shows that the programme accounted for an insignificant amount of the variance.

Table 5.2. The strategies Mark used for deciphering his miscues.

	∑ Str. Misc.	Sounding	Initial-Letter	Meaning	Similar Word	Inventing
Mean (Raw Data) 98-99	17.3	8.6	6.2	1.5	0.5	0.3
Range (Raw Data)	4-34	1-18	1-15	0-5	0-4	0-3
Mean % Use '98-'99		49	37	9	3	2
Mean % Use 1998		47	39	10	4	1
Mean % Use 1999		53	34	8	2	4

Note: The values in this table supplement the raw data chronicled in Figures 6.7 – 6.11. ∑ Str, Misc, = sum of. the strategy miscues.

In 1999 his use of the sounding strategy ranged between 20% and 70%. The regression line showed an increase of 11% in sounding strategy use (see Figure 5.7). However, the variability during term three of the teaching programme was very pronounced with week-to-week differences in percentage use of up to 30% and 40%. This variation is reflected by the regression coefficient which shows that the programme accounted for an insignificant amount of the variance. Figure 5.7 records that in the fourth term this variability had reduced and Mark's percentage use lay between 50% and 70%.

The initial-letter strategy was Mark's second most preferred strategy. He had used this for slightly more than one third of his miscues. His percentage use usually lay in a range of between 10 and 60 percent. This range was 10 percent lower than the sounding strategy range. The regression line shows that Mark reduced his use of this strategy by 5% during the programme but his percentage use could

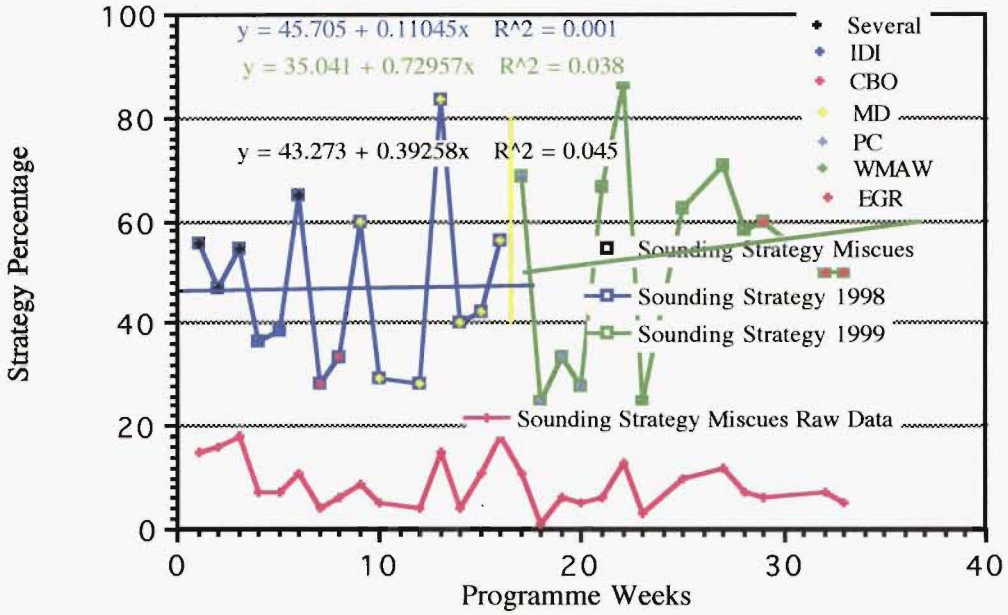

Figure 5.7. Mark's weekly percentage use of the sounding strategy in the strategy running record series.

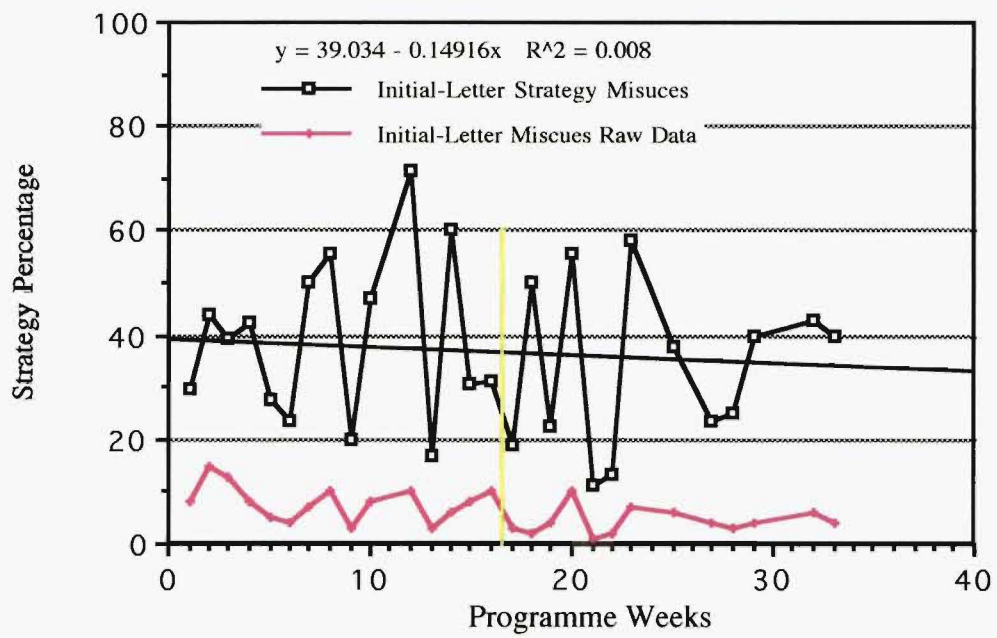

Figure 5.8. Mark's weekly percentage use of the initial-letter strategy in the strategy running record series.

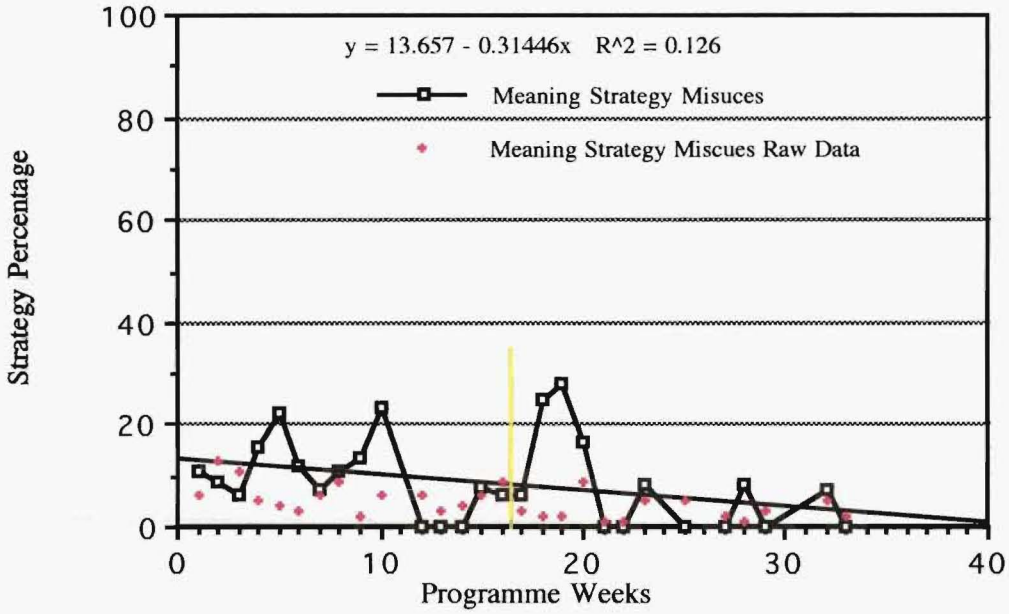

Figure 5.9. Mark's weekly percentage use of the meaning strategy in the strategy running record series.

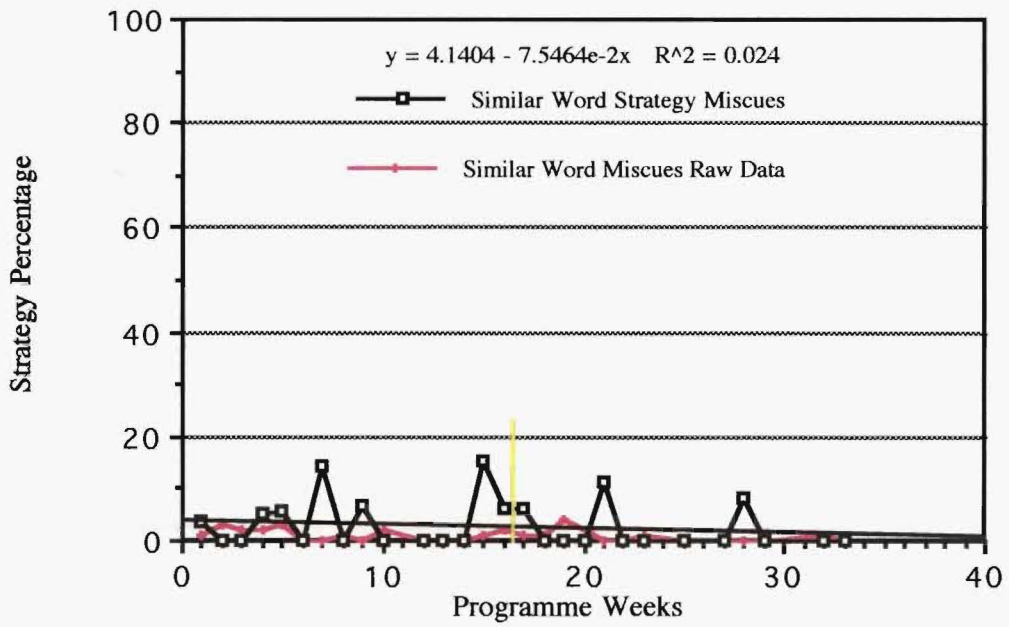

Figure 5.10. Mark's weekly percentage use of the similar word strategy in the strategy running record series.

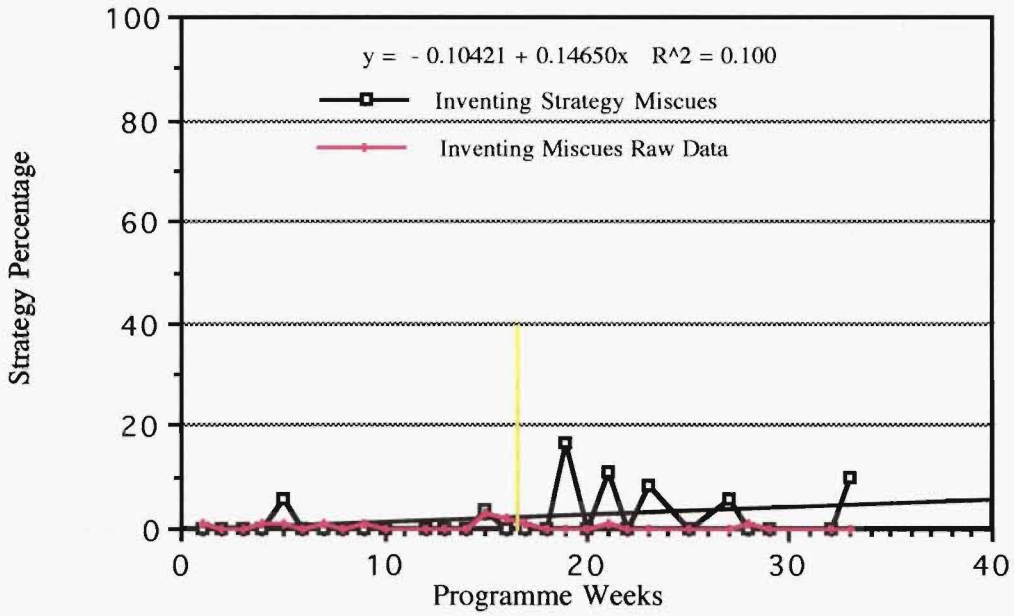

Figure 5.11. Mark's weekly percentage use of the inventing strategy in the strategy running record series.

vary by 20%, 30% and even by 55%. An overall 5% percent drop in use was insignificant in comparison and the regression coefficient confirms this.

Mark made small but consistent use of the meaning and similar word strategies throughout the programme. He used the inventing strategy in only two running records during 1998 but made more consistent use of it during 1999.

Self-Correction Behaviours for Each Strategy

Mark self-corrected half of his sounding miscues (see Table 5.3). His range of self-correction percentages lay between 20% and 70% (see Figure 5.12). His self-correction behaviour was very variable until week 22, often with week to week swings of 20% or more. The regression coefficient reflects the size of this variability in comparison to the size of the overall improvement of 20% recorded by the regression line. It records an insignificant amount of systematic increased self-correction behaviour associated with the programme.

From week 22 the variability in Mark's self-correction behaviour was reduced. The range of the weekly self-correction percentages lay between 55% and 70% (see Figure 5.12). A scan of the running records shows that Mark was developing better skills for sounding words and more frequently gave the correct word but on his second or third attempt.

Table 5.3. The proportion of miscues that Mark self-corrected for each strategy.

	% Sounding sc	% Initial-Letter sc	% Meaning sc
Mean	52	25	38
Range	20-100	0-66	0 - 100

Note: sc = miscue self-corrected, sounding = sounding strategy; Initial-Letter = Initial-letter strategy, Meaning = Meaning strategy.

Mark self-corrected only a quarter of his initial-letter strategy miscues (see Table 5.3). The self-correction percentages usually lay within a range of 0% to 50% (see Figure 5.13). This range was 20% lower than that of the sounding miscues. Mark's self-correction behaviour for this strategy was also very variable with many swings of approximately 20% and some of 40% or more. The increase in self-correction behaviour of 20% recorded by the regression equation is less than, or of a similar size, to many of the week-by-week variations. Consequently the regression coefficient shows an

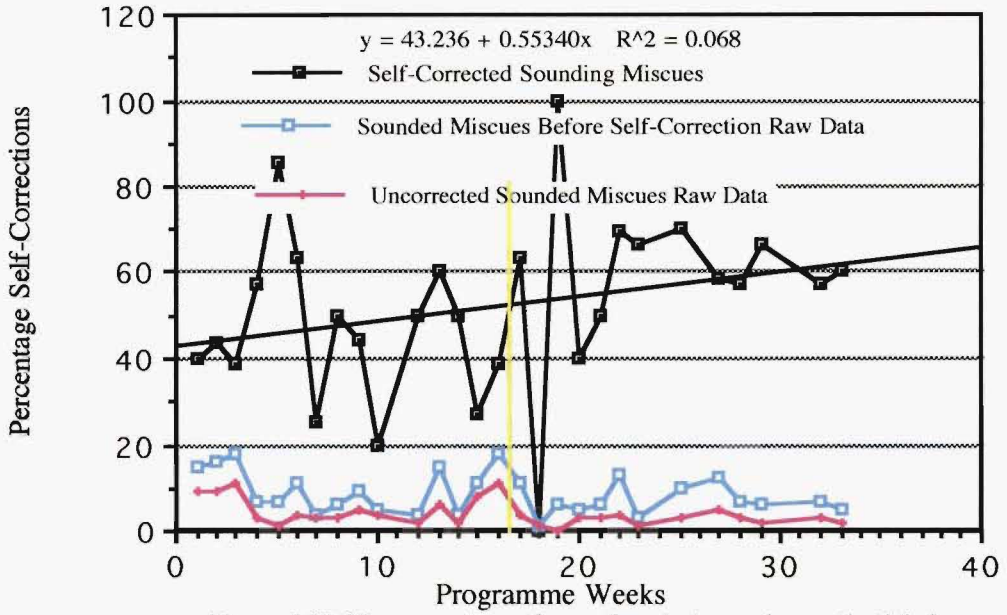

Figure 5.12 The percentage of sounding strategy miscues that Mark self-corrected for the strategy running record series.

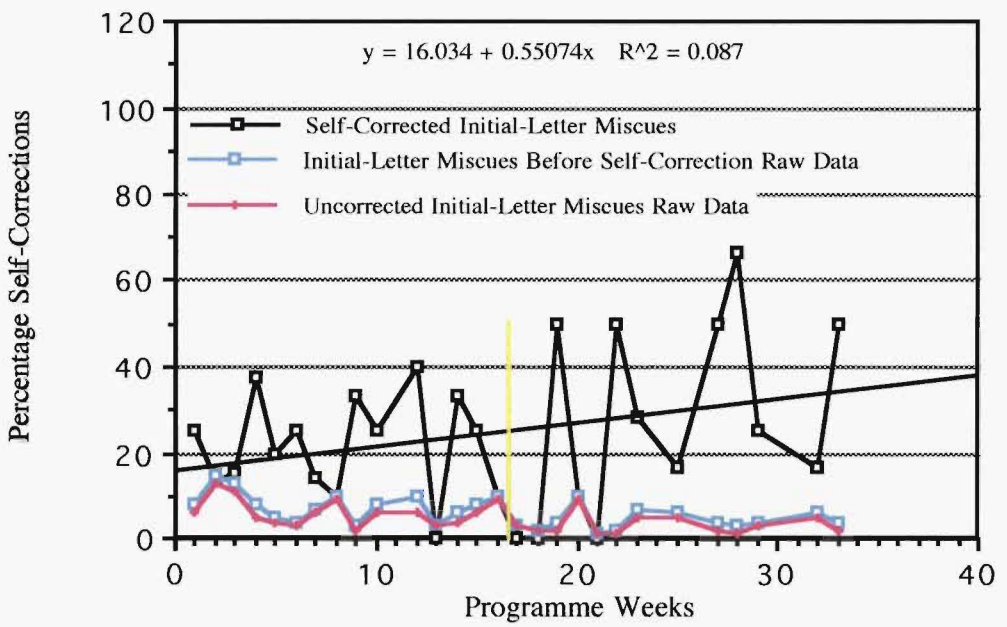

Figure 5.13. The percentage of initial-letter strategy miscues that Mark self-corrected for the strategy running record series.

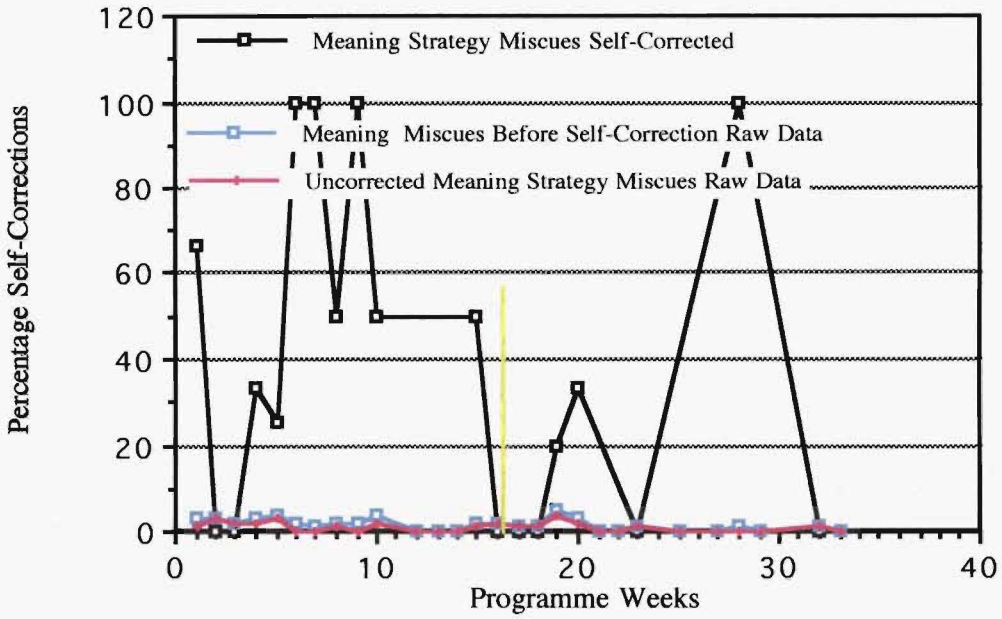

Figure 5.14. The percentage of meaning strategy miscues that Mark self-corrected for the strategy running record series.

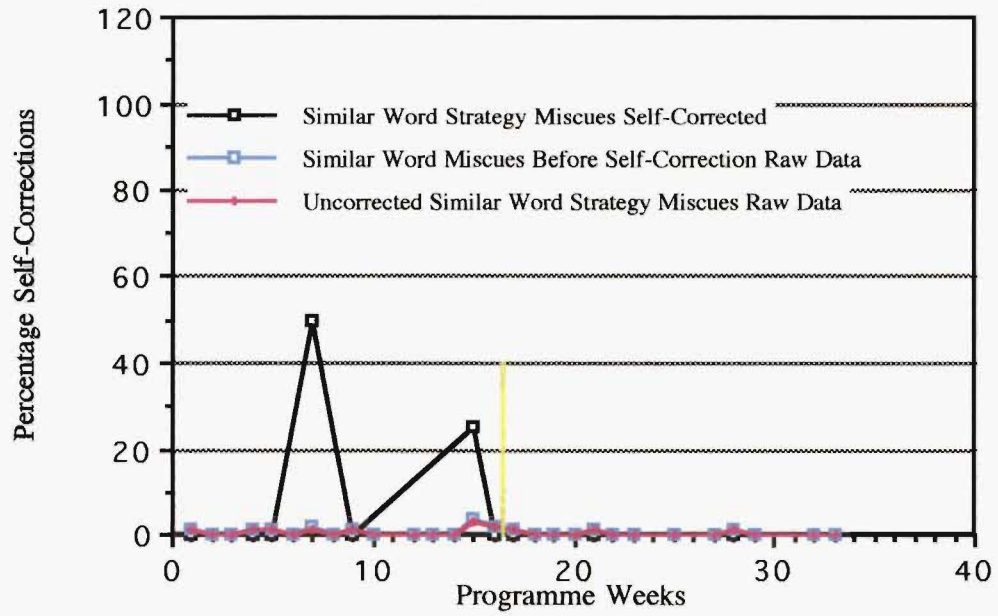

Figure 5.15. The percentage of similar word strategy miscues that Mark self-corrected for the strategy running record series.

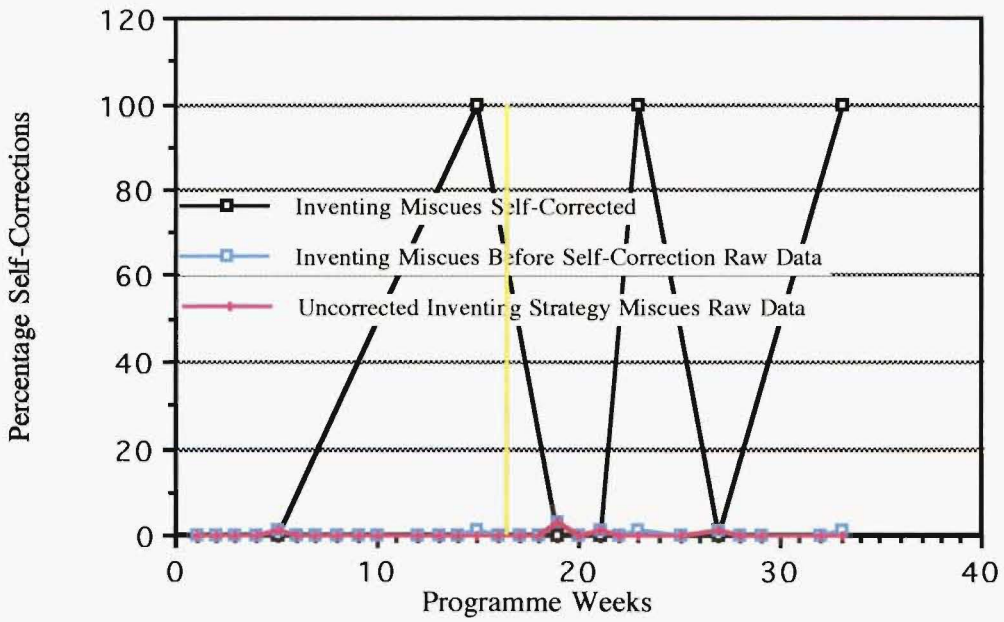

Figure 5.16. The percentage of inventing strategy miscues that Mark self-corrected for the strategy running record series.

insignificant amount of systematic increase in self-correction behaviour associated with the programme.

The samples sizes for the meaning strategy were small (see Figure 5.14). The similar word and inventing strategies were used very infrequently and the samples were very small (see Figures 6.15 and 6.16). The percentage differences for these latter three strategies were consequently very inflated.

Characteristics of Sounded and Initial-Letter Miscues

Table 5.4 gives data about the characteristics of Mark's strategy use for his sounding and initial-letter strategy use. Nearly all Mark's initial-letter strategy miscues were real words, most looked similar to the text word and more than two thirds appeared to have meaning for Mark, but not necessarily the author's meaning, within their context. That such a high proportion of Mark's initial-letter strategy miscues had a similar appearance to the text word gives further support to the previously made contention that Mark lacked automaticity for letter information and was consequently using incomplete and inaccurate letter information.

In contrast, only one third of Mark's sounded miscues were real words, one fifth were words of similar appearance to the text word and one seventh had meaning for Mark within their context, although not necessarily the author's meaning. Comparing miscues from the two strategies, initial-letter miscues were:

- More than three times as likely to be real words;
- Four times as likely to be similar looking words; and
- Five times as likely to have meaning for Mark within the text context.

Table 5.4. The characteristics of Mark's sounding and initial-letter strategies.

	% Real Words	% Similar Words	%Meaning Words
	Sounded Miscues		
Mean	30	22	14
Range	0 - 100	0 - 100	0 – 100
	Initial-Letter Miscues		
Mean	97	82	70
Range	81 – 100	25 – 100	0 – 100

Note: Similar Words are miscues with a similar appearance to the text word. Meaning Words are miscues that gave an acceptable meaning within their sentences. This was not necessarily the author's meaning nor did the meaning necessarily fit with the rest of the passage.

These data provide an explanation for the differences between Mark's self-corrective behaviour for his initial-letter strategy and his sounding strategy. When he used the initial-letter strategy his miscues were often words of similar appearance to the text word which Mark had predicted from the meaning in the passage immediately preceding the miscue. Mark received feedback that he had both correctly matched the letter information and found a word that was consistent with the meaning. He did not self-correct.

In contrast, the feedback he often received about his sounding strategy was to the effect that his miscue was not a real word with text meaning. He had miscued. He was probably also sometimes aware that his miscue was not a good fit for the letter patterns. As a consequence, he self-corrected more frequently when he used this strategy.

Strategy Use and Word Length

Mark usually used either the sounding strategy or the initial-letter strategy to decipher his miscues (see Table 5.2). Table 5.5 shows that the number of syllables in the word influenced which strategy Mark selected.

Table 5.5. The relationship between Mark's choice of strategy and the number of syllables in the miscue.

	1 syllable	2 syllables	3 syllables	(4+5) syllables
	Sounded miscues			
Mean %	22	55	76	88
Range	0 – 100	0 -100	0 – 100	50 - 100
	Initial-Letter miscues			
Mean%	52	37	22	8
Range	0 – 100	0 – 100	0 - 100	0-100
	Meaning Miscues			
Mean%	16	5	One recording	One recording
Range	0-43	0-33 Discontinued After Week 17	Week10	Week 19
	Similar Word Miscues			
No. of Words Raw Data	9	2	1	3
	Inventing Miscues			
No. of Words Raw Data	5	4	1	

Note: One syllable Mean % for Similar plus Inventing miscues was 9% and the change in use at 33 weeks was +4%.

Sounding was Mark's preferred strategy for miscues of two syllables or more (see Table 5.5 and Figures 5.18 – 5.20). For one syllable miscues and a third of his two syllable miscues he used the initial-letter strategy (see Table 5.5 and Figures 5.21 and 5.22). He also used the meaning strategy for a small number of one syllable miscues (see Figure 5.25).

The regression lines show that Mark increased his use of the sounding strategy for miscues of two or more syllables but decreased his use for one syllable miscues. In contrast, he decreased his use of the initial-letter strategy for miscues of two and three syllables but increased his use for one syllable miscues. He decreased his use of the meaning strategy for one and two syllable words.

Mark's use of each strategy was very variable (see Figures 5.17 – 5.26). The week-by-week samples for this syllable data are very small and consequently the percentage differences are inflated. This is particularly true of the data for miscues of three syllables or more. The overall percentage changes in Mark's use of each strategy by the end of the programme were small in comparison to this variability. The very low (see Figures 5.17 –5.20 and 5.22 – 5.26) and low (see Figure 5.21) regression coefficients reflect this.

To summarise, Mark preferentially used the initial-letter strategy for one syllable words and the sounding strategy for words of two syllables or more. During the programme he appears to have strengthened this pattern by increasing his use of the initial-letter strategy for one syllable miscues and the sounding strategy for miscues of two or more syllables. However, these changes were small when considered in relation to the week-to-week variability in his strategy use.

Initial-Letter Strategy

When the initial-letter strategy miscues for words of one, two and three syllable miscues (see Appendix K, Tables K1, K2 and K3) are viewed together it can be seen that most are real words with a similar appearance to the text words. When the complete sample is viewed, it seems likely that more of the miscues would have appeared similar to the text word for Mark than for a fluent reader. Table 5.4 probably underestimates the percentage of similar word miscues for the initial-letter strategy.

Tables K1a, K2a and K3a give examples of one, two and three syllable initial-letter strategy miscues in their context. It can be seen that some examples are miscues that have a similar appearance to the text word (see Table K1a: examples 15a & 15d and Table K3a: examples 15 & 20) and one repeated miscue is an example of poor syntax (see Table K1a: examples 20c & 20f). In addition, many

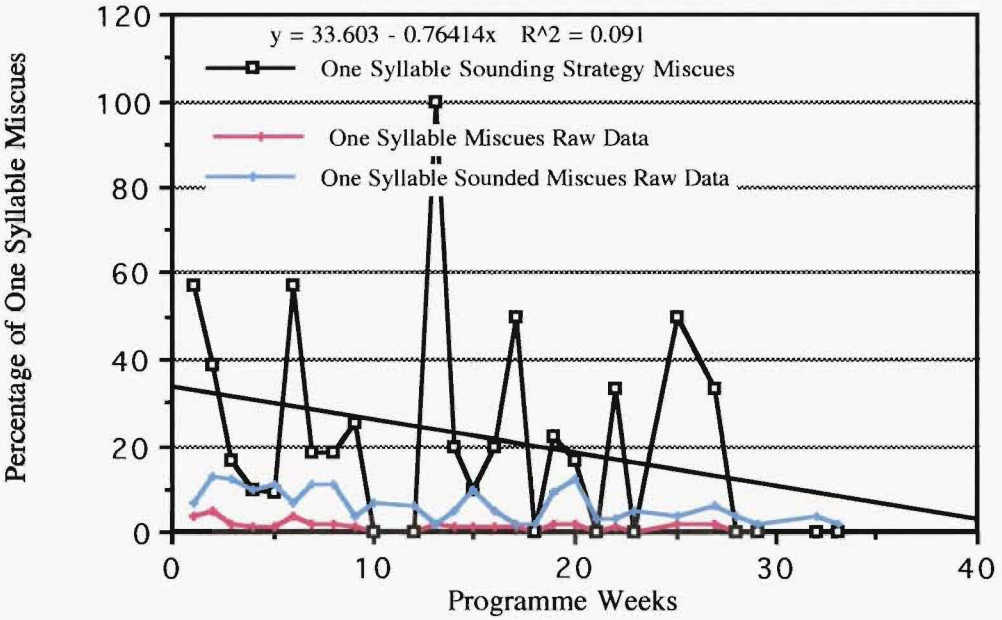

Figure 5.17. The percentage of one syllable miscues for which Mark used the sounding strategy.

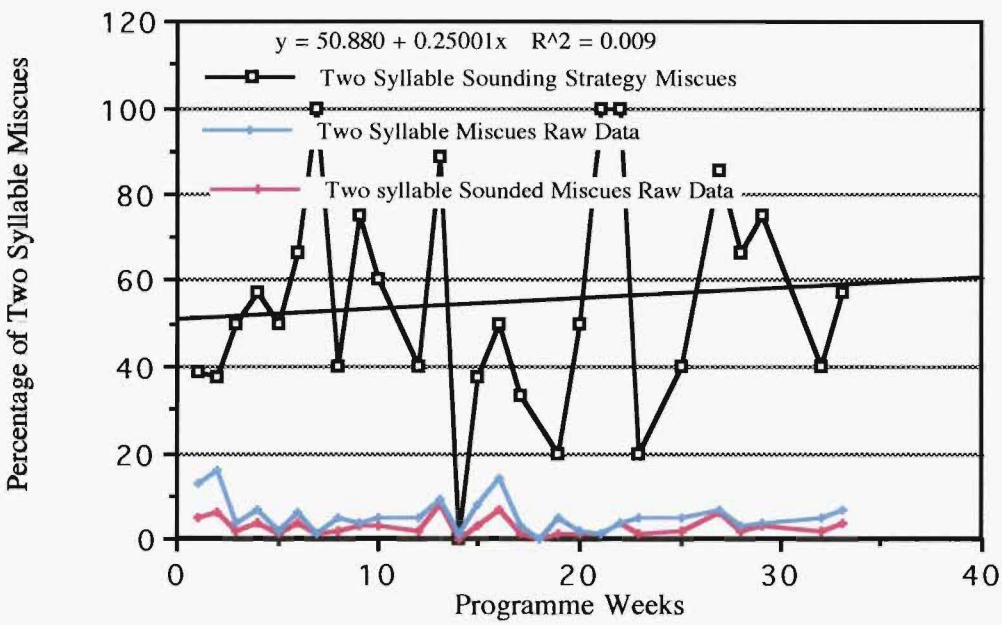

Figure 5.18. The percentage of two syllable miscues for which Mark used the sounding strategy.

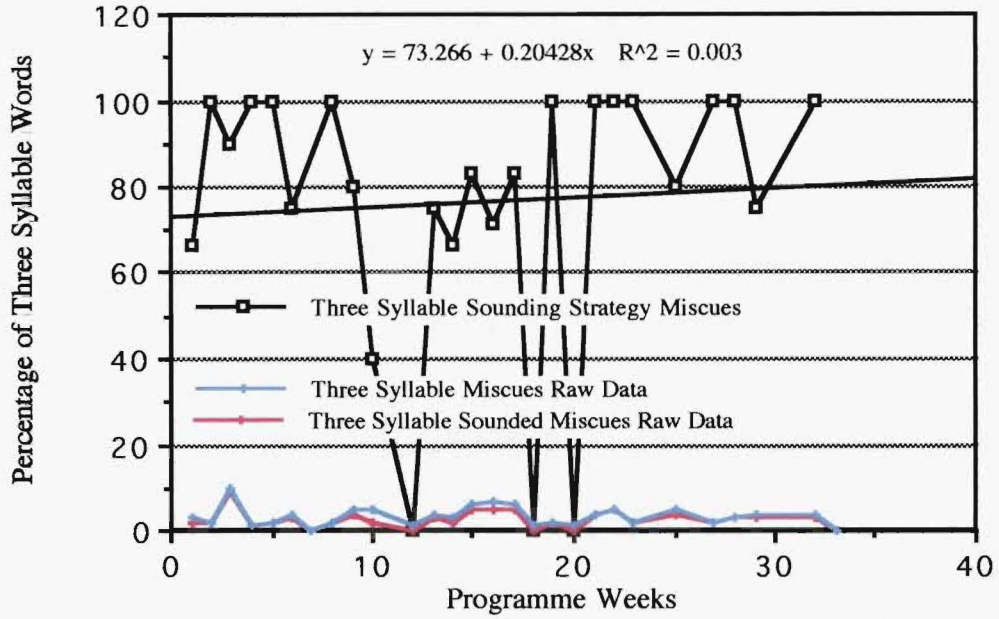

Figure 5.19. The percentage of three syllable miscues for which Mark used the sounding strategy.

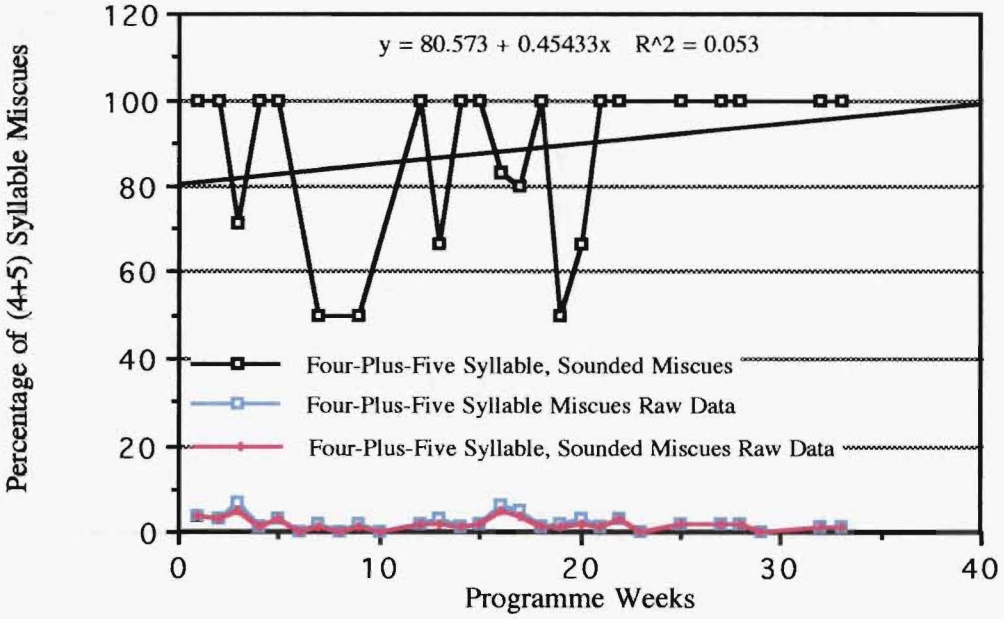

Figure 5.20. The percentage of four-plus-five syllable miscues for which Mark used the sounding strategy.

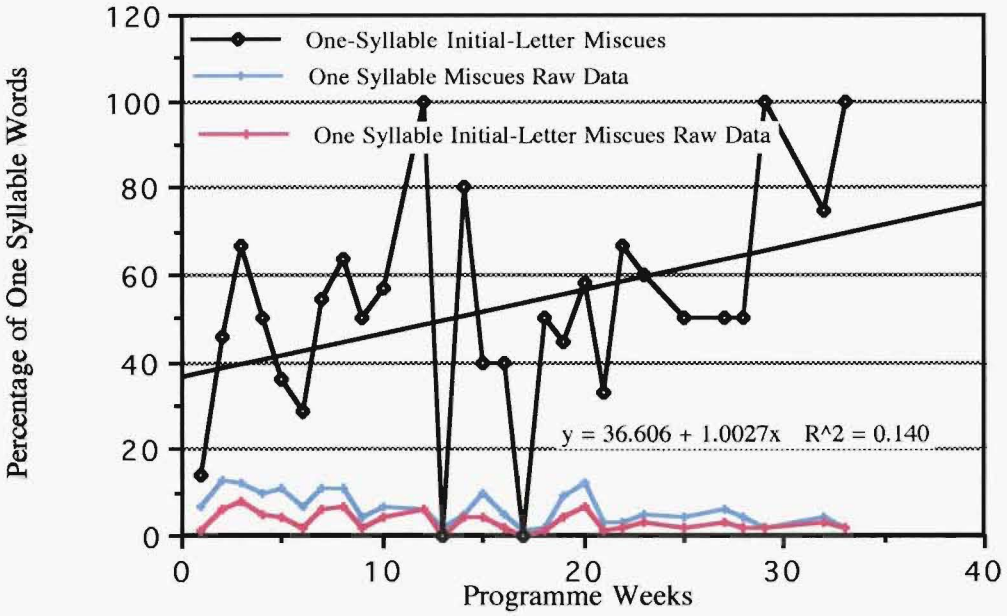

Figure 5.21. The percentage of one syllable miscues for which Mark used the initial-letter strategy.

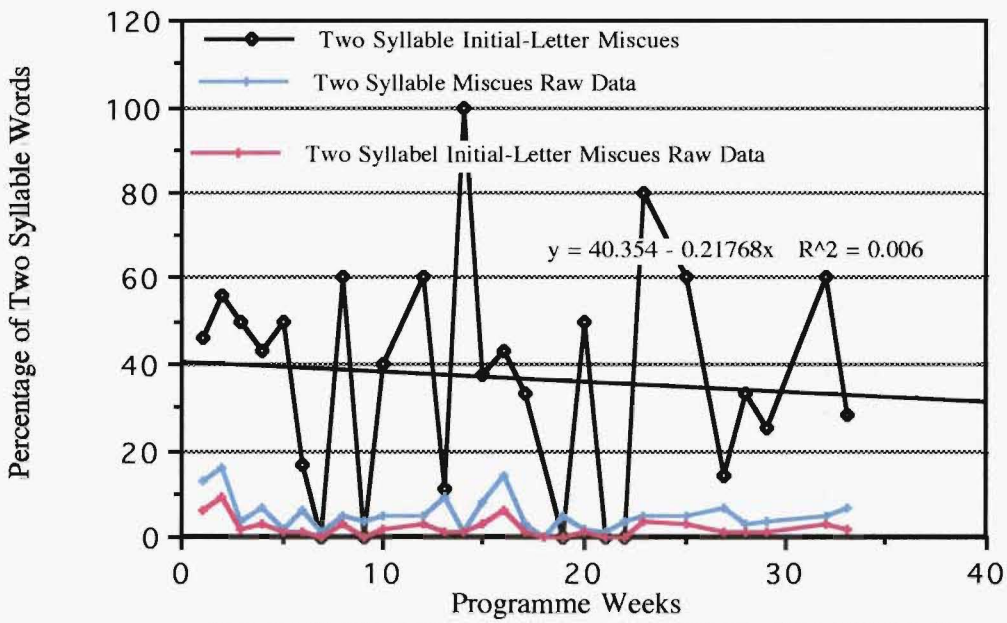

Figure 5.22. The percentage of two syllable miscues for which Mark used the initial-letter strategy.

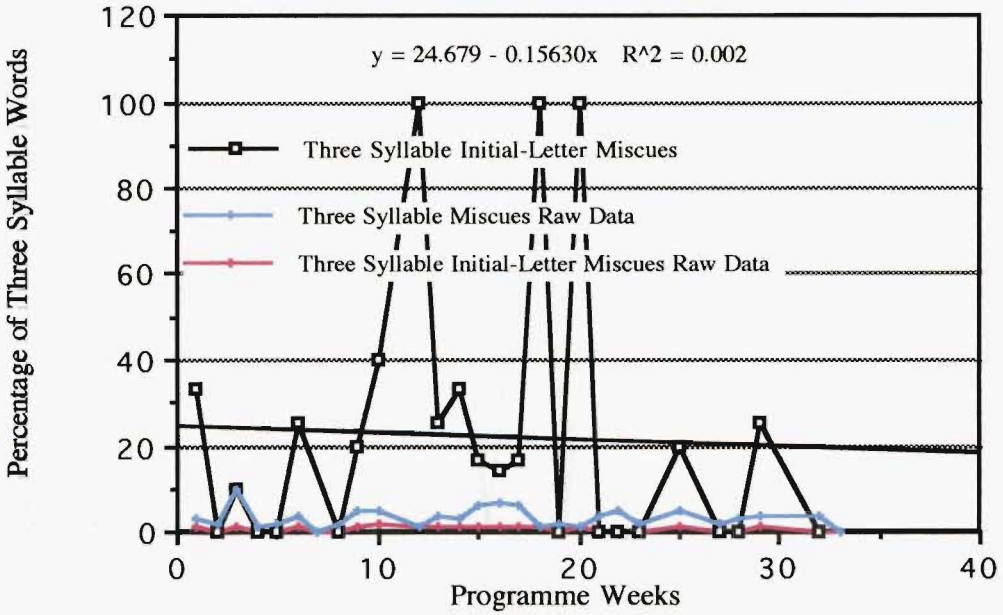

Figure 5.23. The percentage of three syllable miscues for which Mark used the initial-letter strategy.

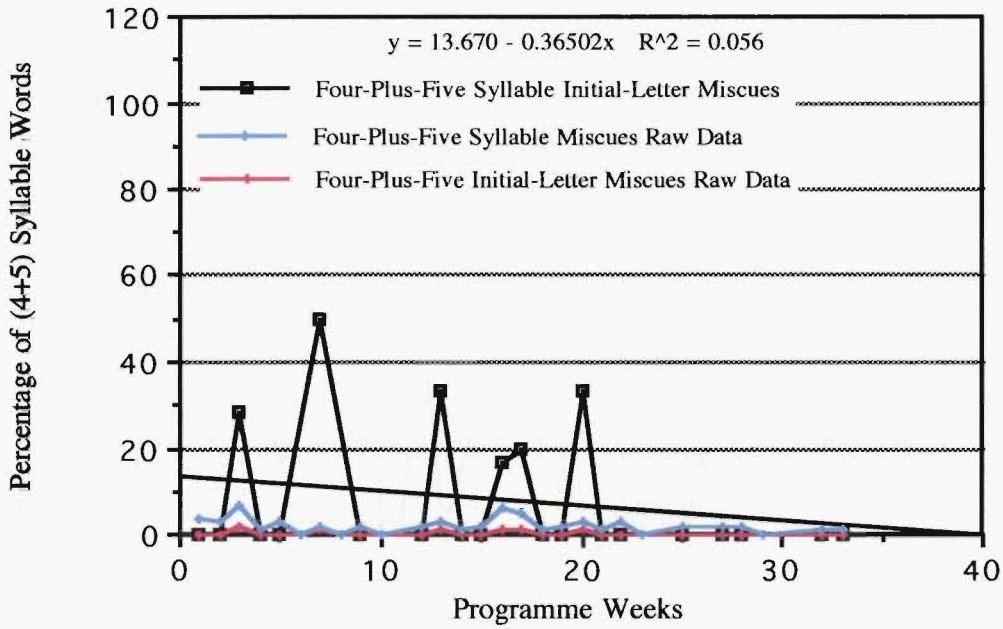

Figure 5.24. The percentage of four plus five syllable miscues for which Mark used the initial-letter strategy.

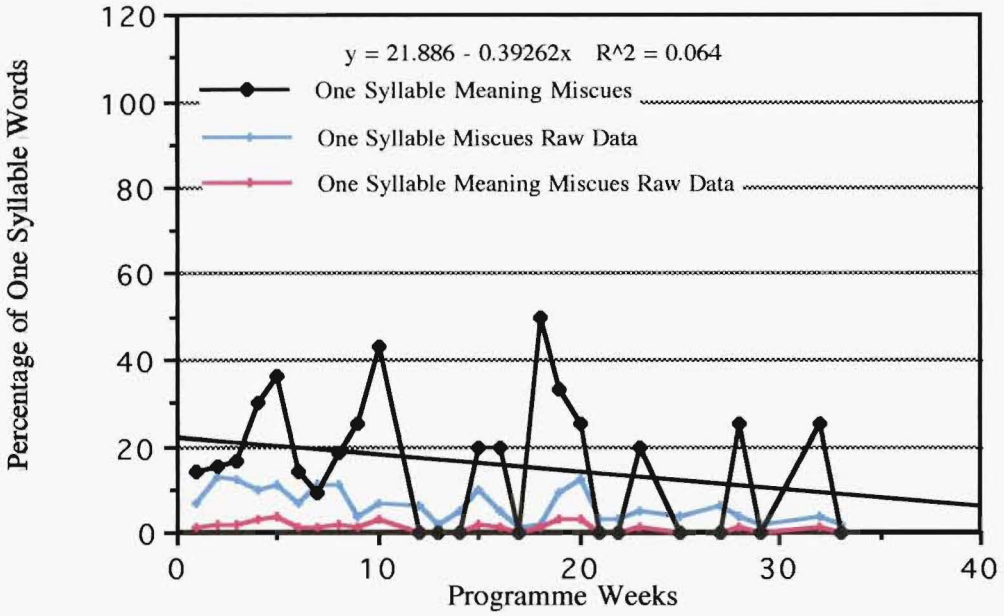

Figure 5.25. The percentage of one syllable miscues for which Mark used the meaning strategy.

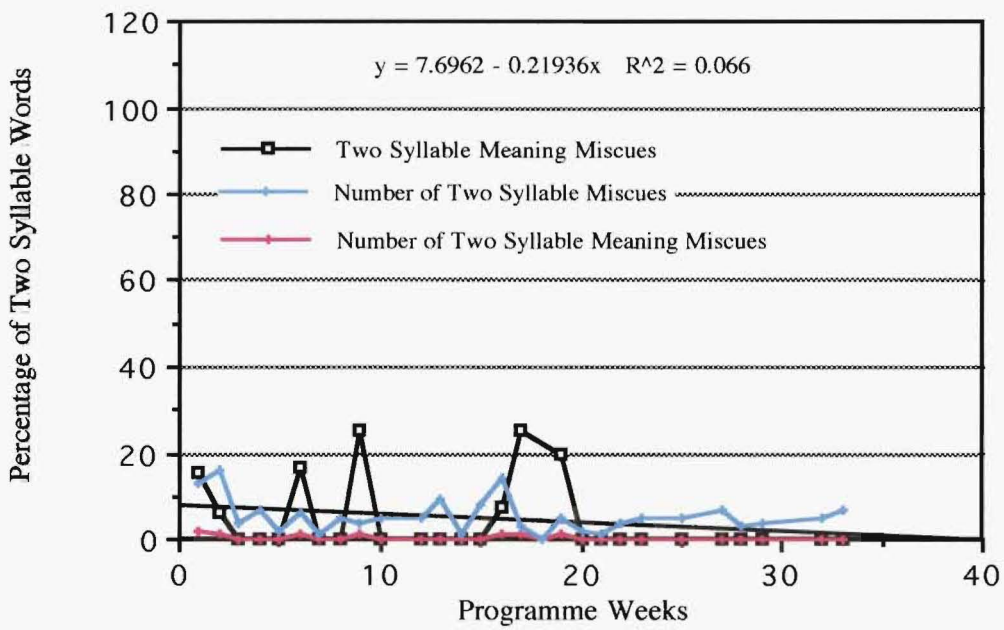

Figure 5.26. The percentage of two syllable miscues for which Mark used the meaning strategy.

miscues had been predicted from the meaning of the text that immediately preceded them. They are miscues with a similar appearance to the text word and had meaning for Mark in their context although this meaning was not necessarily the author's.

Mark self-corrected some of his miscues which involved commonly used words (see Table K1a: examples 15d, 20a, 20b; Table K2a; example 15a). His self-corrections were few (see Table 5.3). Of note is the example where Mark first gave the correct text word and then exchanged this for a word that made no sense in the sentence (see Table K1a: example 15a). It seems that, in this instance, Mark was using inaccurate letter information and failing to integrate this with the text meaning to obtain the correct text word.

Because Mark had always experienced difficulty with word recognition, he would always have read with some degree of 'fuzzy' meaning. It is unlikely that he had an expectation that text should present very clear meaning to the reader. Therefore, when he failed to integrate the meaning and used inaccurate letter information, he was less likely to recognise that he had miscued.

These samples of one, two and three syllable initial-letter miscues provide confirmation for the characteristics of the initial-letter miscues presented in Table 5.4. That is, they are usually real words, most have a similar appearance to the text word and a large proportion have meaning within their context.

Summary of Mark's Programme-Induced Changes

Mark had been taught to read in accordance with the Department of Education's (1985) recommended strategies of repeated sampling of text, predicting a word from meaning then confirming or self-correcting. Many of Mark's miscues were real words with a similar appearance to the text word and meaning in their context. That is, Mark's initial-letter strategy was in line with the strategies taught in his school reading programmes. Unfortunately Mark used incorrect and incomplete letter information which resulted in frequent miscues.

Because Mark was taught to read by a method that involved incomplete letter information and had difficulty accessing accurate letter information, he was left with only meaning and syntax cues available to determine whether a word was the text word or a miscue. Mark was used to reading with 'fuzzy' comprehension because of his difficulties with word recognition. Reading with only syntax and meaning available as a check on accuracy prevented him from acquiring an increasingly

discerning ear for semantics and syntax. His self-correction skills were increasingly limited as a result of this method of teaching.

During the programme Mark was taught phonemic awareness, letter-sound information including blends and phonograms and the strategies to apply this knowledge. As a result of this tuition his Neale and Burt scores showed gains of 2.5 and 3 years respectively. At the beginning of the programme Mark had difficulty deciphering commonly occurring two and three syllable words. By the end of the programme he was frequently able to decipher words of four and five syllables.

No change in percentage accuracy associated with the programme was recorded for the fluency running record series where Mark read under pressure from the clock. For the strategy running record series, there was an increase of 3% in percentage accuracy and decreasing variability between the week-to-week scores as a result of the programme. In addition, the mean score for the 1999 strategy series was 1% higher than that for the fluency record. These improvements were small. But Mark achieved them reading more difficult journal text when strategy use rather than reading speed was the focus of the assessment.

By the fourth term of the programme, Mark had increased his use of the sounding strategy and decreased the variability with which he used it. He also decreased his use of the initial-letter strategy during the programme.

These overall patterns masked the influence of changes associated with the number of syllables in the miscues. Mark preferentially used the initial-letter strategy for one syllable miscues and the sounding strategy for miscues of two syllables or more. As the programme progressed this pattern was strengthened. For miscues of one syllable Mark increased his use of the initial-letter strategy and decreased his use of the sounding strategy. For miscues of two or more syllables Mark increased his use of the sounding strategy and decreased his use of the initial-letter strategy. However, these trends were small in comparison to the week-to-week variability in his strategy use

Towards the end of the programme Mark's increasing ability to use the sounding strategy was reflected in a higher self-correction rate as he often found the correct text word on his second or third attempt.

These results show that Mark improved his ability to use sounding as a strategy for deciphering multisyllabic words during the programme. However, his increasing self-correction rate and slow reading speeds showed that he had yet to achieve automaticity with his developing knowledge.

Mark's Strategy Use and Reading Self-Beliefs

Mark as a Strategic Reader

At the beginning of the programme Mark believed that sounding was an effective method for deciphering words. But he did not believe he could use this strategy well "If I could properly sound out the words ---" (Table 5.6).

Initially his difficulties with accurately processing letter information were very obvious (e.g. 30.7.98 afletes/athletes, accur/according, ov ovis over overly/obviously; 6.8.98 imped impeetately/ immediately; 17.9.98 de-like-catch/delicate; 5.11.98 discrease/decrease; and 26.11.98 hos hosteric/historic), but by the end of the programme Mark was becoming much more proficient at breaking the word up and sounding it through (see Table 5.6). Mark's increasingly successful application of these strategies through the course of the teaching programme increased his belief in sounding as an effective strategy.

He always maintained that he sounded unfamiliar words but was less sure about which other of the programme-taught strategies he used. In the relaxed, informal discussion at the end of each weekly strategy text reading, Mark volunteered that he only used "breaking the words up" and not the other sounding strategies (Table 5.6, 20.5.99 & 27.5.99). Because the questioning for the strategy questionnaire in the strategy assessments was closer and more formal, Mark's responses were often fuller. At times he would say that he had used changing vowels, changing hard and soft c & g and changing stress. However, these answers were not spontaneous and may have been more as a result of either my queries or of his later reflection under my questioning. It may also have been that when searching for a word with a letter and meaning match he unconsciously did change sounds and stress as necessary. He certainly did not seem to maintain a conscious, metacognitive belief that these were useful strategies to be routinely used where applicable.

Mark used two factors to confirm that he had read the correct text word. He checked if his word had the right sounds for the letter groups (e.g. Table 5.6: "fitting in") and the right meaning (e.g. Table 5.6 "making sense"). He also said that he could not tell if a word was correct or incorrect when he was reading on his own. He volunteered that sometimes he waited for my judgement if he was reading with me.

These results indicate an element of learned helplessness in Mark's behaviour. He was strategic in his approach. He believed in tracing the line with a pen to improve his eye tracking to the next line. He believed in breaking the word up and sounding it through. If he did not think he had a match with

the text word he often had several further attempts at trying to sound it through (as listed in the examples above).

Table 5.6: The cognitive strategies and metacognitive monitoring that Mark stated he used to decipher unfamiliar words.

Date	Cognitive Strategies for Unfamiliar Word Recognition	Metacognitive Monitoring Strategies for Unfamiliar Word Recognition
24.6.98	*approached:* trying to get the first sound like 'app' . Make sound of letter r. Taught last term to make the letter o say its own name. ch, ed Sounding right through the word. Try it I 'spose. Ar-per up-ber. *Given help with 'app.'*. app-r-oa-ch-ed. Ask somebody.	What is hardest about reading? Sounding out the words. If I could properly sound out the words I could probably read a lot faster. Look at it to make sure if it could be said another way – if all the sounds are right – size of word. Looking for smaller words or words I know
27.8.98		Waited for me to tell him if he was correct
29.10.98	Break up into letter groups and try and sound them out. Then ask for help. Try and work it out. Sound out another way. c & g. different vowel sounds.	Sometimes check it makes sense. If rest of sentence – If word isn't right it doesn't make the word sound right.
24.11.98	Nevertheless, exploring, nonsense: Broke them up. Cautiously, proceeded: guessed, looked at them and got what would fit in the sentence. Didn't do anything else. Can't get a word – just sit there or read on. If read on might get it by what would fit in and make sense - ask. Try and work it out. Try the different rules – changing vowels (two sounds for a) c & g –sometimes work.	Do you work out whether you are correct or not? No. If reading by myself I don't know. What would make you think you were not correct? Doesn't sound right. Sounding it out doesn't make sense. Fitting in and making sense
18.2.99.	Break them up into letter groups. *Resources* :just looked at it. Thought 'diminishing 'resources' would fit in and make sense. *Dim-in-ish-ing; de-bate:* Debate fitted in. Working them out and then guessing (guessing on discussion was looking for a meaning fit) *Fascinated:* breaking it up fas-in-ated	20.5.99 Use breaking it up. Nothing else 27.5.99 Mark thought he only used sounding and not other strategies.
13.6.99	*Photography:* pho-to-gr-aph-y Guess, Change stress helped with this word Other strategies sometimes used. Break words up sometimes change stress. Read on. Change vowel sounds didn't know if used the c & g strategy.	
14.10.99	Used breaking up the word *Quantity*: an/un changed vowel. q/g check. *Fiery* :fi-er-y used meaning. Break it up and sound it out. *Gigantic* :he knew the two different g sounds. Reads on. That's about it.	

Note: The examples of unfamiliar words in this table were words from Neale texts. The levels for the corresponding dates are given in Table 5.7.

Although he was strategic, he used restricted monitoring techniques and a restricted repertoire of strategies. He did not appear to explicitly monitor either where in the word he might be failing and/or which of the other programme-learned strategies would be appropriate. If he did not achieve a satisfactory match by breaking the word up and sounding through he was happy to ask or skip the word out.

In addition, Mark felt a continuing loss of control as he did not believe that he could tell if the word he used was correct or not. Mark's expectation was that often he would be incorrect in deciphering unfamiliar words, would need to self-correct and would not be able to decide if his chosen word was correct.

In summary, Mark displayed learned helplessness. He displayed reluctance to try to increase his monitoring skills for reading accuracy. Instead he relied on another person's judgement or skipping the word. Learned helplessness was also apparent in his failure to actively use the full range of strategies the programme was teaching him. Instead he relied on having troublesome words supplied or skipped them.

Mark's Causal Attribution Beliefs

Mark's Reading Ability Self-Ratings

At the beginning of the reading programme Mark believed that his silent reading was average (see Table 5.7). In contrast, he believed his oral reading was below average but never among the very bottom performers in his cohort. He stated that when reading orally he was afraid of getting a word wrong. It is also interesting that Mark did not perceive oral and silent reading as being the same process for which his reading ability would be equivalent. He believed his reading comprehension was above average but was aware that difficulties with word recognition limited his comprehension. He rated his reading speed as below average.

By February 1999 Mark entertained even more positive views about his reading ability. He believed he was above average at silent reading, average at oral reading and speed of reading and amongst the top readers in the school for reading comprehension. But by July 1999 his beliefs were again less positive for silent reading and oral reading and speed of reading. Yet he continued to maintain his over inflated view that his reading comprehension was on a par with the best readers in the school.

In comparison, when asked to rate his reading for the previous year, he rated himself as being among the least able readers in his year for silent reading, oral reading and speed of reading. He thought his

reading comprehension was below average if he was unable to read the words but above average when he could read them. The comparison of Mark's beliefs about his reading ability in the previous year and his beliefs about his reading by 1999 shows that he believed he had made progress in word recognition during the first two terms of the programme.

Table 5.7. Mark's ranking of his reading ability in comparison with the other pupils in his school cohort.

Date	School Year	Silent Reading	Oral reading	Comprehension	Speed of Reading
22.6.98	10	3	4	2	4
3.11.98	10	2	4	3	4
15.2.99	11	2	3	1	3
13.7.99	11	3	4	1, if can read the words, '2' if not. Reading words a problem.	4
20.10.99	11	3	4 scared he'll get a word wrong.	2	4
		Mark's rating of his last year's (year 10) reading ability from his year 11 perspective as an indication of how he thought he had improved.			
13.7.99	11	5	5	1 If can read the words, if not '4'	5
20.10.99	11	5	5	4 Couldn't read the words.	5

Note: Mark rated his reading ability on a scale of 1 – 5. On a par with the best readers in his school cohort = 1. The questions used to obtain this self-belief data are given in Appendix F, question 6a.

In 1998 Mark was in the special needs class. He is likely to have formed his judgements about his reading ability by rating his performance in class in comparison with that of his class mates. He perceived the progress he was making in word recognition in relation to his class mates and increased his self-ratings of his ability accordingly.

By the end of the programme his ratings of his reading ability, except for reading comprehension, were the same as at the beginning of the programme. In 1999 Mark had been mainstreamed into a School Certificate English class. His self-ratings at the end of the programme were likely to have resulted from his comparisons of his reading ability with these new class mates. For example, his History teacher said that his comprehension was as good as his class mates, hence his high self-belief about his reading ability. He would know he had difficulty finishing his work and would accordingly rate his reading speed as slower than his class mates. He would also know that, unlike his classmates, he frequently read or pronounced words incorrectly if asked to read aloud. Hence his beliefs about his reading ability became less positive again.

Mark's Reading Self-Beliefs about Effort, Guessing and his Knowledge

Tables 5.8 and 5.9 list Mark's chosen easy-to-read and hard-to-read Neale Diagnostic passages along with his likely percentage accuracy scores for each passage. Mark consistently rated a Level 4 Neale text as easy-to-read and a Level 6 Neale text as hard-to-read at the beginning, the end and after the programme. At the beginning of the programme, the easy Level 4 text had a difficulty level for Mark that would have placed it at the lower end of Clay's (Clay, 1985) hard text category. By the end of the programme, Mark's easy text passages had a difficulty level that bordered on Clay's easy text category.

At the beginning of the programme the text Mark rated as hard, had a difficulty level three levels above his test ceiling on the alternate Neale Text. That is, for him it was unreadable. By the end of the programme his percentage accuracy scores for these passages were at the upper end of Clay's (1985) hard text category.

At the beginning of the programme Mark thought he often knew the best ways to read the words, but that he only tried hard to decipher about half of the difficult words and often guessed. By the end of the programme, he thought he knew the best ways to read the words, he always tried hard to decipher them and never guessed.

A term after the programme was completed he thought he often knew the best ways to read the words and that he had no need to try hard or to guess. Mark was beginning to understand the effortless reading fluent readers associate with easy text.

These ratings indicate that Mark expected reading to be a very difficult process. Only at the end of the programme was he beginning to gain some perception of 'easy reading'. Given his reading speeds this was still not the effortless, automatic reading of the fluent reader.

Table 5.8. Mark's estimated percentage accuracy and causal attribution beliefs for the Neale Diagnostic Tutor passages that he had rated as easy or hard to read.

Date	E: H	N	% Acc	Know/Don't Know	Guess/Didn't Guess	Try/Didn't Try
24.6.98	E	4	82.3	2	2	3
13.7.99	E	4	94.8	1	5	1
14.10.99	E	4	95.6	2	No need to guess 5	No need to 5
24.6.98	H	6	—	4	3	1
13.7.99	H	6	87.9	1	Violently from Meaning. 5	2
14.10.99	H	6	89.2	2	3	1

Note: Mark's beliefs about his reading knowledge and behaviours were measured on a 1 – 5 scale. Know = 1, Guess = 1, Tried Hard = 1. The questions for the causal reading belief are given in Appendix D. Know = know the best ways; E = easy; H = Hard; N = Neale level for the Diagnostic Tutor passages; % Acc. = percentage Accuracy that Mark attained in his reading assessment for the Neale passages for Forms One or Two at the equivalent level to those selected by Mark from the Diagnostic Tutor that were used to determine these causal attributions.

In contrast, considering his 'hard text' attributions at the beginning of the programme, it can be seen that Mark did not think that he usually knew the best ways to read words, thought that he often guessed, but also thought that he tried hard. These beliefs had changed by the end of the programme. Then he thought he knew the best ways to read the words, he tried hard and no longer guessed.

In other words, the teaching programme was successful in teaching Mark more positive attribution beliefs. By the end of the programme, with both easy and hard text, Mark thought that he usually knew how to decipher a word, that he rarely guessed and that he usually tried hard to find the right word.

Mark's stated belief that he knew the best ways to read unfamiliar words had implications for his strategy use. If he believed that he knew the best ways to read words the implication is that he believed that the strategies he used were the 'best ways'. In other words, Mark believed that 'breaking the words up' and 'sounding' were the 'best ways' to read words. He believed in the effectiveness of the programme teaching with regard to these strategies. Feedback from, first, his increasing success in deciphering words and second, his gains in assessment scores would have

reinforced this view. It would also have reinforced the view that, as he already had increasing success, he had little need to monitor the effectiveness of his strategy use or try to include the use of the 'change the vowels, hard and soft c & g and stress' set of strategies.

Table 5.9. Mark's estimated percentage accuracy and self-efficacy judgements about his ability to read the Neale Diagnostic Tutor passages that he had rated easy or hard to read.

Date	E: H	N	% Acc	Can Read Page/Can't Read Page	Easy to Read/Hard to Read
24.6.98	E	4	82.3	2	3
13.7.99	E	4	94.8	2	4
20.10. 99	E	4	95.6	3	3
24.6.98	H	5	—	4	3
13.7.99	H	6	87.9	3	5
14.10.99	H	6	89.2	5	5

Note: Mark's self-efficacy judgements about his reading ability were measured on a 1 – 5 scale. Can Read = 1, Easy to Read = 1. The self-efficacy judgement questions are given in Appendix D. E = easy; H = hard; N = Neale level from the Diagnostic Tutor; % Acc. = percentage accuracy that Mark attained in his reading assessment for the Neale passages for Forms One or Two at the equivalent levels to those selected by Mark from the Diagnostic Tutor that were used to determine these self-efficacy ratings.

To sum up, Mark's self-beliefs encouraged an active strategic approach with a restricted repertoire of strategies. He entered the programme with these beliefs. On the positive side, the programme enhanced his beliefs in trying hard to work out a word using strategies and not guessing. On the negative side, the reading programme failed to widen his strategic approach. His metacognitive evaluation of the correctness of a word, where in the word his strategy was failing and what further strategic approaches might facilitate finding the correct word remained limited throughout the programme.

The lack of metacognitive evaluation was not surprising as, within the year, there was barely time to teach the necessary letter-sound and the cognitive strategy knowledge for applying the letter-sound knowledge. An attempt to teach a metacognitive framework for monitoring his strategy use was not successful. Teaching metacognitive strategies for active evaluation of word-correctness and cognitive strategy use must necessarily follow teaching letter-sound and cognitive strategy knowledge in a remedial programme.

Mark's Self-Efficacy Beliefs

Table 5.9 gives Mark's self-efficacy judgements about his ability to read the passages he had rated as easy or hard. At the beginning of the programme, Mark thought that his chosen easy-to-read text would be moderately easy to read with little help. This in spite of the fact that for him its difficulty level placed it at the lower end of Clay's (1985) hard text category. By the end of the programme his easy-to read-text bordered into Clay's easy text category yet Mark now thought it was hard to read. A term after the programme the easy-to-read text was now within Clay's easy text category yet Mark thought it would be moderately difficult to read and that he would need some help.

At the beginning of the programme, the alternate form of Mark's chosen hard-to-read text was three levels above his test ceiling. Mark rated this text, which he would have been unable to read, as moderately easy but did recognise that he would need a lot of help. By the end of the programme the difficulty level of his hard-to-read text lay at the upper end of Clay's hard text category. Yet now he believed that his self-rated hard-to-read text was very hard to read but that he could read it with a moderate amount of help. A term after the programme, he thought that he would require a lot of help to read such very difficult text.

At the beginning of the programme, Mark made high self-efficacy judgements about his ability for reading extremely difficult text. This was evident in his willingness to read *Alpha Two Zero* during the lesson from the beginning of the programme. A term after the programme finished, Mark had improved his ability to judge the difficulty level of text and concomitantly developed more realistic self-efficacy judgements for reading different difficulty levels of text.

Programme Effectiveness

Strategies

Mark entered the programme with a stated belief in 'sounding out' as an effective strategy. During the course of the programme he expanded this to 'breaking the word up and sounding out', the approach taught in the programme. His belief in these strategies was enhanced by his increasing success at deciphering words and his gains in his assessment reading scores.

At the beginning of the programme, Mark stated he could not evaluate his attempts to decipher text words. During the programme he did not learn to evaluate his strategy use or to evaluate where in a word he was unsuccessful. Nor did he develop a belief in the effectiveness of the taught strategies for

changing vowel sounds, hard and soft c & g, or word stress. By the end of the programme he had not increased his ability to know when to apply the additional programme taught 'change' strategies.

Attributions

The programme enhanced Mark's belief that he knew the best ways to decipher the words in texts he rated as hard.

Mark came to believe that he no longer needed to guess words but could decipher difficult words by working hard at them in texts he rated as easy and hard.

Self-Efficacy to Read

Throughout the programme Mark made high self-efficacy judgements about his ability to read very difficult text but believed that reading was a difficult process. A term after the completion of the programme, he could make more realistic judgements about the difficulty level of a passage. Concomittantly, he also made better self-efficacy judgements involving his ability to complete a passage independently.

Mark's Language Profile

Mark had difficulties with pronunciation of two different kinds. First, he frequently had difficulty pronouncing multisyllabic words (e.g. alterntives/alternatives, avances/advances) and missed syllables out. Second, he had difficulty saying the sounds accurately in words (e.g. wif/with, aflete/athlete, interjuce/introduce). This second inaccuracy was the result of inaccuracies in identifying and/or reproducing the sounds in the words.

His vocabulary (Table 5.10) at the beginning of the programme was average on the Peabody Picture Vocabulary Test (PPVT-R) (standard score 99). By the completion of the programme this had risen to moderately high (standard score 120). This was a statistically significant gain at the 90% confidence level.

Table 5.10 presents Mark's scores for the subtests administered from the Clinical Evaluation of Language Fundamentals (CELF-3). There were no significant differences between Mark's 1998 and

1999 subtest scores and no significant differences between subtests in the 1998 set or the 1999 set. All Mark's standard scores lay below the mean standard score of 10 but only his Expressive Language scores for Recalling Sentences and Formulating Sentences were below the mean with a 90% confidence level.

Table 5.10. Mark's standardized scores for the Peabody Picture Vocabulary Test - Revised (PPVT–R) and selected subtests from the Clinical Evaluation of Language Fundamentals - Third Edition (CELF–3).

	1998			1999		
	St. Score	PR	CI 90%	St. Score	PR	CI 90%
Peabody Picture Vocabulary Test—Revised (PPVT–R)						
	99	48	92-106	120	91	108-122
Clinical Evaluation of Language Fundamentals—Third Edition (CELF–3)						
Subtests						
Word Classes	7	16	4-10	9	37	6-12
Formulated Sentences	4	2	2-6	6	9	4-8
Recalling Sentences	7	16	5-9	6	9	4-8
Word Associations	8	25	6-10	8	25	6-10
Rapid Automatic Naming	Errors	0/3		Time	102/65 secs.	
	Equivalent Age = 13+years			Equivalent Age = 8 years		

Note: St. Score = standard score; mean standard score PPVT–R = 100; Mean standard score CELF–3 = 10; PR = percentile rank; secs. = seconds; CI = confidence interval

His score for the Recalling Sentences subtest lay below the mean but the range of scores for a 90% confidence band included scores in the average range. Therefore, Mark's score could not be regarded as an area of weakness. Mark substituted words which usually had a similar meaning, sometimes contracted two words, at other times gave contractions for two words, and also placed phrases within a sentence in a different order. On the longer sentences, he missed out words or phrases and in one case, most of the sentence.

For the Formulating Sentences subtest, the score range was below the average range at a 90% confidence level in 1998 and just entering the average range in 1999 (Table 5.10). These score ranges indicate very real difficulties with this subtest. Mark could not form sentences using many conjunctions. He also had an instance of difficulty with tense and another involving difficulty with agreement using negatives. These difficulties were still in evidence in 1999.

That is, although Mark had average ability for comprehension, his scores for the Recalling Sentences and Formulating Sentences subtests indicated that he had difficulties remembering the smaller details

in the text and difficulties with syntax. Difficulties with syntax were also noted in the preceding miscue analyses. These problems would have made the use of the meaning and syntax cues less effective for Mark.

Assessment of Mark's phonological processing skills (see Table 5.11) revealed that Mark could hear and count the syllables in a word. He could also hear rhymes. At the beginning of the programme, he could usually hear the sounds in words, although he seemed to have difficulty with the sound of 'n' on the end of a word, but could not isolate the sounds to count them. He had a phonological processing problem preventing him from acquiring letter-sound correspondence knowledge to decipher words.

Table 5.11. Mark's raw scores for the subtests of the Queensland University Inventory of Literacy (QUIL).

Queensland University Inventory of Literacy

Subtests	P/Sc	Raw Scores							
		1998				1999			
		15/6	24/8	29/10	23/11	22/2	22/4	27/7	19/10
Nonword Spelling	24	2	5	0	2	4	4	6	5
Nonword Reading	24	6	18	16	14	15	15	16	12
Syllable Identification	12	10	10		9			11	
Syllable Segmentation	12	11	10		11			11	
Spoken Rhyme Visual Rhyme	12	11	9		12			10	
Spoonerisms	20	9	13		13			17	
Phoneme Detection	12	9	8		9			7	
Phoneme Segmentation	12	1	7		7			8	
Phoneme Manipulation	10	4	7		5			6	

Note: P/Sc = possible score.

The teaching of sound isolation in words at the beginning of the programme raised this subtest score. The score remained stable for the rest of the programme. In retrospect, Mark would have benefited from explicit ongoing teaching of sound isolation. Teaching in letter-sound relationships did not transfer back into improving sound isolation skills in words.

Non-word reading was initially very weak but improved rapidly over the first two months. This was the period when sound isolation and letter-sound correspondence were taught, before the strategy teaching section. This teaching was effective for Mark.

In the Rapid Automatic Naming subtest (Table 5.11), Mark accurately named each test item but his time was very slow (equivalent age eight years). The problems that Mark showed with automaticity for letter-sound associations throughout the programme were the result of problems with automaticity as well as with phonological processing of the sounds in words.

That is, Mark's extreme difficulty with learning to read was the result of phonological processing difficulties in isolating sounds in words and automaticity difficulties preventing fluency. In addition, an expressive language problem made it difficult for him to say words accurately, adding further difficulties to his ability to develop accurate letter-sound knowledge. Although his comprehension skills were good and he relied heavily on these to cue words, his ability to remember language accurately and his difficulties with syntax, evident in the Formulating Sentences subtest and the miscue analyses, would have made the meaning and syntax cues less available. Mark had a cluster of difficulties that had compounded to make reading a very difficult process.

Mark's Story

When he entered the programme Mark had very severe difficulties with word recognition. His reading was slow with frequent self-corrections, especially for words that he had attempted to sound. He used inaccurate and incomplete letter information. He frequently miscued when reading one and two syllable high frequency words that he had read correctly on previous occasions. Many of his miscues had the same initial-letter and a similar appearance to the text word together with contextual meaning. He lacked the letter-sound knowledge and strategies to decipher unfamiliar words of two or more syllables. For Mark, reading was a difficult and laborious task.

Mark made self-efficacy judgements about his reading ability that enabled him to read difficult text in his lessons but not independently at home. He chose as easy-to-read text a passage that would have been extremely difficult for him to decipher, showing that he had no concept of the easy, fluent reading that normally developing readers enjoy.

He entertained slightly to very optimistic views about his ability to read. He believed he was average or below for silent reading, oral reading and reading speed and above average for comprehension. He

believed that he often knew the best ways to decipher words, that he tried hard to decipher about half the difficult words, but that he often resorted to guessing.

Mark believed the sounding strategy was effective but that he had difficulty applying this strategy. "If I could properly sound out the words ---". He knew he should monitor for miscues as he read but did not think that he could determine whether he had miscued or not. "If I'm reading by myself I don't know" (see Table 5.6).

Mark's listening comprehension was above the mean for his age and his PPVT-R vocabulary score was average. However, he exhibited a range of language difficulties which included problems with pronunciation, word recall and syntax. He had difficulty with making predictions, making inferences and creating meaning, remembering sentences and constructing complex sentences. These difficulties would have impacted on his use of the meaning and syntactic cues for word recognition.

He had phonological processing problems with isolating and manipulating the sounds in words and lacked the letter-sound knowledge to read and spell non-words. He showed difficulty with integrating letter-sound information and contextual meaning to cue words when he was reading. Finally, his rapid automatic naming speed, although accurate, was slow for his age.

To sum up, when he entered the programme Mark exhibited a range of difficulties, including language, phonological processing difficulties and letter–sound knowledge. These problems would have made it difficult for him to use and integrate letter-sound knowledge, contextual meaning and syntactic cues for word recognition. He held slightly to very optimistic beliefs about his ability to read. He tackled very difficult text in his lessons. He thought that sounding was an effective strategy but that he was not very proficient at applying it. As a result of these difficulties and beliefs, he had come to believe that he tried hard to decipher about half the difficult words in his chosen easy-to read-passage but that he frequently resorted to guessing.

Mark's self-beliefs about his ability to read were subject to change as a consequence of his comparisons of his reading ability with that of his classmates. By February 1999, Mark had come to believe that his reading ability was average or above. These increasingly positive beliefs resulted from judgements he made about his reading in comparison to his special needs class mates together with the knowledge that he was to be mainstreamed into School Certificate English and History classes. But during 1999, as a result of his judgements of his reading ability in comparison with his new School Certificate class mates, his beliefs were again lowered. He came to believe that he was average or below in reading ability but above average in comprehension.

As a result of the programme, Mark began to develop an understanding of 'easy' fluent reading. His self-efficacy judgements remained positive enough to enable him to read difficult text in the lesson but not independently at home. He continued to believe in the effectiveness of the sounding strategy. But by the end of the programme he had increased his belief in his ability to use it. This belief was reflected in his more positive beliefs that he always knew the best ways to read difficult words, that he worked hard at trying to decipher them and that he no longer guessed.

As a result of his positive beliefs about his reading ability, his belief in the effectiveness of the sounding strategy and his increasingly positive beliefs about the effectiveness of his knowledge for deciphering difficult words, Mark was fairly consistent in applying the sounding strategy, particularly to words of three or more syllables. His high self-correction rate for this strategy, particularly after week 22, reflected his persistence in applying it to difficult words.

Mark was a mastery oriented learner. He improved his phonological processing which would have enabled him to more readily understand the letter-sound knowledge he was being taught. His letter-sound knowledge improved. His vocabulary improved, apparently as a result of his increased exposure to text. As a result of his increased letter-sound knowledge and his fairly consistent and persistent practice of the sounding strategy, he learned to read words of up to five syllables and words containing less frequently used spelling conventions. As a consequence, his Neale and Burt scores recorded accelerated progress of two and half and nearly three age equivalent years respectively.

Mark believed he often miscued and believed he needed to self-correct. He knew to check the letter groups and use contextual meaning and syntax to monitor his deciphering efforts. But he believed he often could not determine whether or not he had miscued. He felt a consequent loss of control and displayed an element of learned helplessness. When reading difficult text, he relied on being told he had miscued, being supplied with the correct word, or skipping difficult words. He did not consistently metacognitively monitor his deciphering for miscues. He did not monitor his sounding efforts to see where in a word he had miscued. He did not develop the flexibility to change sounding strategies if his initial deciphering attempt was unsuccessful. His reluctance to monitor his deciphering for miscues and to use the full set of sounding strategies was likely to increasingly limit his progress.

Mark did not achieve accelerated progress when reading journal text because of the high number of one and two syllable high frequency words it contains for which Mark often used his initial-letter strategy with a resulting loss of reading accuracy. His fluency running record scores recorded for

reading journal text showed no overall gains in reading accuracy, His reading speed remained very slow. His strategy running record scores were recorded for more difficult journal text. But because there was an emphasis on using the sounding strategy, Mark did show a decrease in the variability and a small increase in percentage accuracy.

To summarise, Mark changed his beliefs about his ability to read as a consequence of his comparisons of his ability with that of his classmates. But his self-beliefs were positive throughout the programme. He believed in the effectiveness of the sounding strategy and came to believe that he knew the effective ways to decipher difficult words. He was a mastery oriented learner. As a result he became fairly consistent and persistent in using sounding. During the programme Mark increased his phonological processing and letter-sound knowledge As a result of his increased letter-sound knowledge and his fairly consistent and persistent practice with sounding, he learned to decipher words of up to five syllables. As a result, his Neale and Burt assessments showed accelerated progress.

But Mark did not use the full range of strategies that he was taught. Neither did he work to develop metacognitive monitoring skills which would have enabled him to begin to perceive his miscues more readily, to perceive where he had miscued in a difficult word and to perceive which other sounding strategy from his repertoire might be more effective. Although a mastery learner when applying cognitive strategies, he displayed an element of learned helplessness in monitoring his strategy use and having the flexibility to change his strategy use where necessary.

For Mark, the programme was successful. He made accelerated progress in word recognition. It enabled him to attain sufficient word recognition skills to enter two School Certificate classes in 1999. However, he remained inconsistent and inaccurate when deciphering frequently encountered words of one or two syllables. Unfortunately, a year was not long enough to allow him to achieve the word recognition skills necessary for easy, fluent reading.

CHAPTER 6

Case Study 3: John

John was a 13-year-old, Year Nine adolescent at the beginning of the programme. His Neale Form I (1988) age equivalent score for reading accuracy was 8.9 years An informal listening comprehension test using the Neale texts gave an equivalent age score of 12.3 years. He scored a percentile rank of 81 in the school's Progressive Achievement Test of Listening Comprehension (Reid, Johnstone, & Elley, 1994) (see Table 2.1). Comparison of his reading accuracy score with his two listening comprehension scores showed that John fulfilled the programme criteria for a reading disability because his extremely poor word recognition was preventing him achieving his likely reading comprehension potential.

It is possible that John may have had considerable potential. His Mother reported that he had been in the second Cantamath team for his intermediate school the year before. However, when he started secondary school at the beginning of the year, John had been placed in one of the two Year Nine, special needs classes because of his very poor reading and spelling achievement.

John's Mother said that the family has many books. She bought the newspaper regularly, belonged to the local library, read *House and Garden* and enjoyed books by Wilbur Smith and Steven King. John's Aunt had a set of encyclopaedias and the family had several dictionaries. John was read to every night as a preschooler.

John received Reading Recovery. When he was nine years old, he was given a second remedial reading programme for five months; one hour of one-on-one tuition twice a week. During the reading programme, he began to bring books home from school which he read for an hour in bed each night. He also self-corrected the f/th confusions in his speech when he was speaking at home.

His Mother said John was always quiet. Even as a baby he didn't cry much, but just lay awake in his cot. As an adolescent he presented as a slow moving, slow speaking inarticulate individual, a person who could easily become the victim of playground teasing. His mother described him as a "loner". She also said that in Year Eight he stopped going to school for the last four months of the year because he was being teased and she could not persuade him to go.

John often complained of stomach pains and was frequently absent from school throughout the first three terms of the programme. Sadly, by the beginning of the fourth term, he had developed severe

depression and stopped coming to school altogether. A severe reading disability, such as his, is a recognised risk factor for depression (Bender, Rosenkrans, & Crane, 1999). At the very end of the fourth term of the programme he began to intermittently return to school. On his return, he came once for a lesson but did not cope well with the effort of choosing a book to read. There was a silent but mutual agreement with John to discontinue the programme.

John's Reading Programme

John received the reading programme as described in Chapter 2. He did not require any additional strategies or modifications to the programme strategies.

John's Reading Profile

Standardised Assessments

John's Neale Reading Accuracy equivalent age scores (see Figure 6.1) show more than two years of progress between his initial assessment in May 1998 and his final assessment in February 1999. The regression line accounts for a high 75% of the variance. An examination of his scores and their relationship to the regression line reveals the steadiness of his progress through the two 1998 terms, progress in which he had made a one-year gain at the beginning of 1999.

John read fairly extensively (for a pupil with his difficulties with word recognition) in his vacation (see Appendix L). This reading, which is discussed later in the programme, would have contributed to his very good progress through this vacation period.

When he entered the programme, John had difficulty with accurately reading letter groups (taking/talking, place/palace) and syllables (mystery mysterious, requirement/required) in words. By February 1999 he was able to read many multisyllabic words (responsibilities, subsequently). But he was often inaccurate with word recognition (experience/expeditions, responsible/reasonable) and did not attempt to read some words (accumulated, familiar).

John's Burt Word Recognition (Gilmore, Croft, & Reid, 1981) scores show a similar two year gain (see Figure 6.2) with larger gains in scores through the second half of term IV in 1998 and the Christmas Vacation. The regression line accounts for a high 80% of the variance.

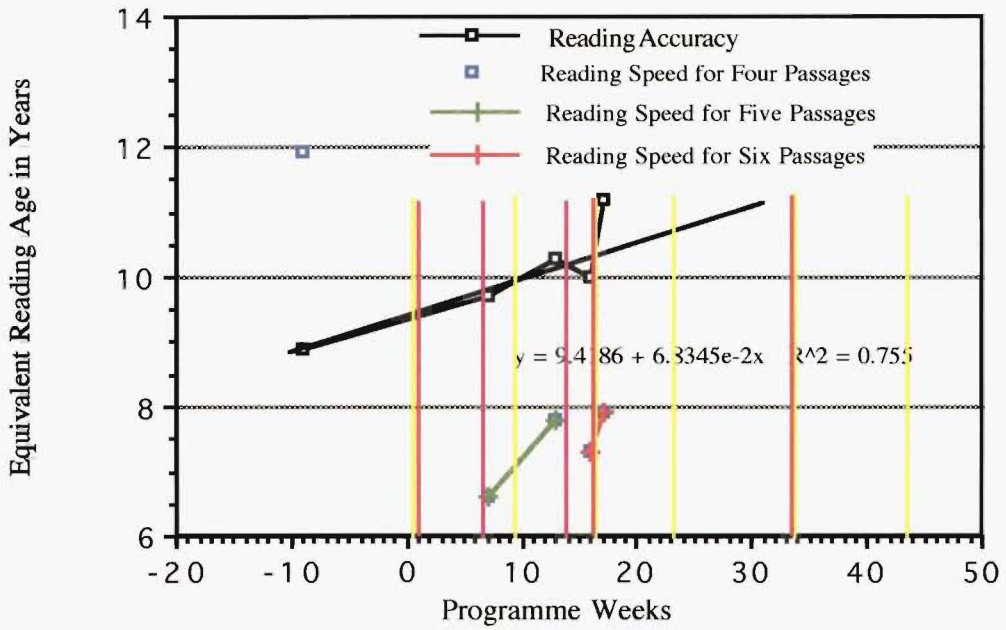

Figure 6. 1. John's Neale Reading Accuracy and Reading Speed age equivalent scores.

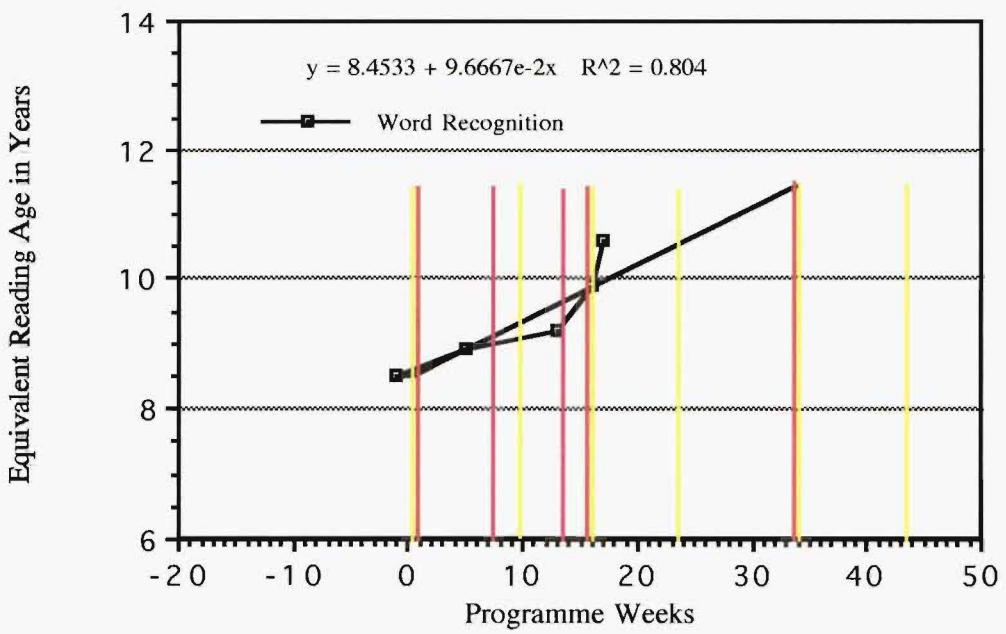

Figure 6.2. John's Burt Word Reading age equivalent scores.

His first assessment showed that he could read some multisyllabic words (overwhelmed, steadiness). He was often inaccurate when reading word endings (know/known, explore/explorer) and he did not attempt most of the multisyllabic words. In his February assessment, he was attempting many more multisyllabic words (terminology, excessively, economy). However, he still had problems reading word endings (circumstan/circumstances, labour/labourers) and the middle syllables in many longer words (reparation/reputation). In addition, he did not attempt many of the longer words (contemptuous, philosopher).

John read slowly. For two of his reading speed scores John had read all six Neale passages (see Figure 6.1). These two scores reading speed speed scores lay between seven and eight age equivalent years. Such slow reading speeds suggest that John had not yet gained automaticity for letter-sound correspondence. With only these two scores for reading speed over the full six passages it is not possible to comment on any programme induced trends.

John's Neale and Burt scores show that the reading programme was very successful in helping him to make accelerated gains in word recognition. By the beginning of 1999, he was able to read many multisyllabic words. He had also become more proficient at accurately deciphering the middle letter groups and syllables in these words although he continued to have a problem with word endings. His slow reading speeds over six Neale passages showed his lack of automaticity for word recognition. The fact that his Neale scores were slightly raised in comparison with his Burt scores suggests that he used the word context in the passage to aid his word recognition when he was reading text.

Weekly Fluency Running Record Assessments

Nearly all John's weekly fluency running record scores for reading accuracy (see Figure 6.3) lay between 96% and 99 % and within Clay's (1985) independent reading level. The mean score was 97.2% (see Table 6.1). John was reading 10-12 year level journal articles with a level of accuracy that is recognised as being sufficient to prevent frustration. Such a level of accuracy is acceptable in a "learning to read" programme where text meaning is used to support word recognition. It is doubtful if it is sufficient for the secondary school, subject based curriculum where the level of reading accuracy must be sufficient for "reading to learn". That is, word recognition for unfamiliar words must be proficient enough to support the reader when the subject matter and vocabulary are less familiar.

Reading speeds (see Figure 6.4) for this fluency running record series were variable. All the scores except one lay between 50 and 90 words per minute. When the Neale conversion Figures were used

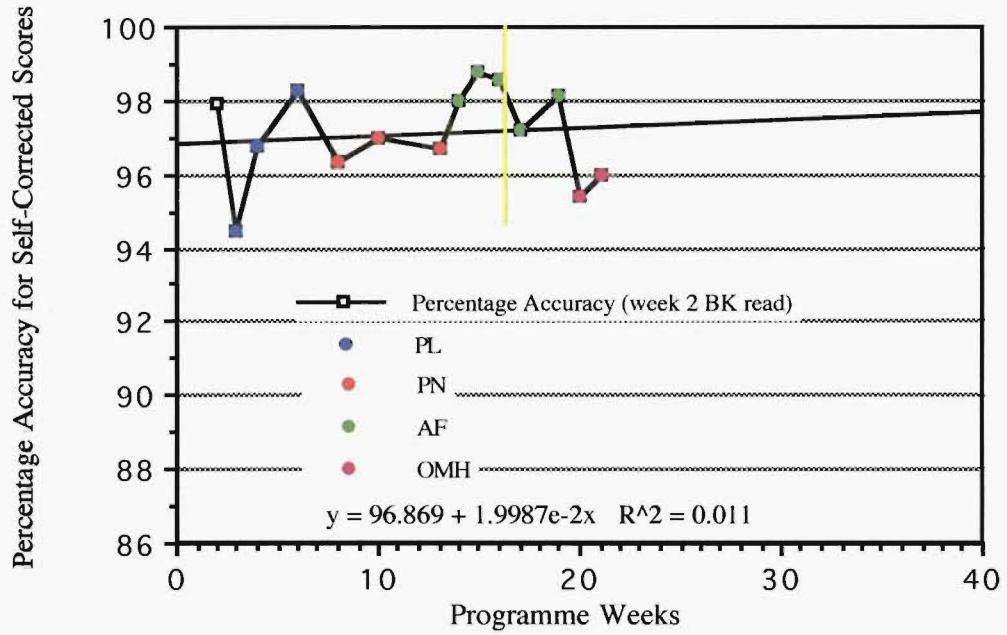

Figure 6. 3. John's weekly self-corrected percentage accuracy scores for the fluency running record series.

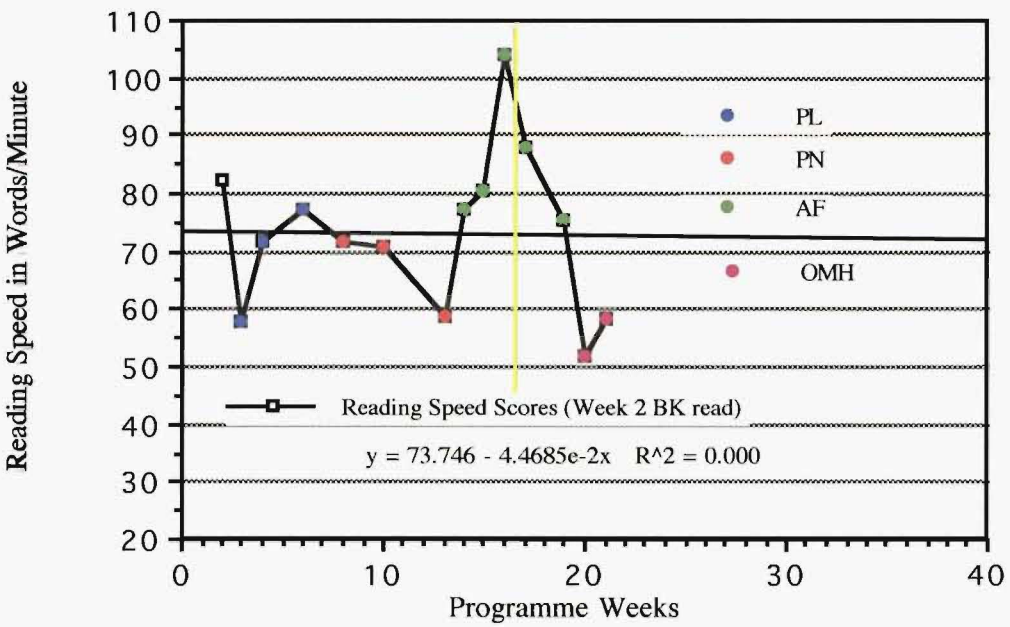

Figure 6.4. John's weekly reading speed scores for the fluency running record series. The key to the journal article initials is given in Appendix G.

to convert these scores to equivalent reading ages the range obtained was 7.8 – 11.4 years. The mean score (see Table 6.1) was 74 words per minute or 9.9 equivalent reading age years. John's average reading speed was well below that expected for his age group.

Table 6.1. John's percentage accuracy and reading speed means for the weekly fluency and strategy running record series.

Assessment Name	Programme Week Numbers	Mean
Fluency RR % Acc. Graph	1-22	97.2%
Fluency RR Fluency Graph	1-22	74.4 w/m, RA 9.9 y
Strategy % Acc. RR Uncorrected	1-21	89.7 %
Strategy % Acc. RR Self-Corrected	1-21	94.4 %

Note: % Acc. = % Accuracy; uncorrected = % accuracy when all stumbles and miscues are counted before self-correction; self-corrected = % accuracy after self-correction; RR = running record; w/m = words per minute; y = years; RA =reading age equivalent

To summarise, his fluency, running record scores showed that, at a 10 – 12 year level, John was an independent reader. It also showed that he was a slow reader who lacked accuracy and automaticity for word recognition.

Examples of Miscues

A quick scan of his week by week miscues revealed that John had been unable to attempt one or two words in most of the records (engineer, eke, atmosphere, docile). He had also been unable to sound the occasional word to find a real word, much less the correct word (qually/quarry, frerce/fierce). However, most of his miscues were real words with a similar appearance to the correct word (mercury/murky, streak/stretch, dirt/duty).

Several groups of miscues were examined. These were miscues involving pronouns, tense contractions of two words and the similar word group of/from/for/form.

- Appendix M, Table M1 lists John's miscues involving pronouns. Apart from an omitted pronoun in Week 10, miscued pronouns occurred only in the first four running records and only once in

each record. For each of the four examples, John had predicted the miscue from the context in the preceding portion off the sentence (see Appendix M, Table M1a).

- John had a series of miscues that involved tense (see Appendix M, Table M2). These were of three principal types. He sometimes interchanged past and present tense, he was inaccurate when reading word endings and he used poor syntactic knowledge (creeped/crept, has/had, were/was).

- Appendix M, Table M3 lists John's miscues involving the contraction of two words. In an interesting, often repeated example (well/we'll) he did not decipher the apostrophe. He did not accurately read the word endings, either omitting the word ending or confusing two different endings. Finally, sometimes he gave the contracted form instead of the full two words and sometimes he gave the two words instead of the contraction.

  These contraction miscues show John's poor ability at deciphering word endings accurately. Sometimes he self-corrected apparently because the sentence sounded incorrect (see Appendix M, Table M3a: 15a, 15b, 19c) but often he failed to detect poor syntax (see Appendix M, Table M3a: 2b, 2c, 8, 19a, 19b,).

- There were no miscues involving the of/from/for/form group of similar words.

To summarise, in this fluency running record series, John sometimes miscued because he had difficulty sounding the word to achieve a correct match with the text word. For this group of miscues, John had unsuccessfully applied the knowledge and strategies that the programme was emphasising. If this had been the principal group of miscues in this running record series, progress should have been apparent that was in line with his progress in his Neale and Burt assessments. However, most of the miscues had different characteristics.

A second group of miscues were either real words that looked similar to the text word or were correct words with incorrect endings. For both these types of miscues, John had failed to accurately process the letter information. For a third group of miscues, John had used poor syntax combined with inaccurate letter information.

That is, when he was under time pressure, John often miscued in this fluency running record because he used incomplete and inaccurate letter information. In addition, sometimes John used prediction from contextual meaning in association with this incomplete and inaccurate letter information and sometimes he did not. A poor knowledge of syntax contributed to the number of miscues.

Weekly Strategy Running Record Assessments

John read 11-13 year, journal text for the strategy series of running strategy records (see Figures 6.5 & 6.6). The emphasis in these assessments was on the strategies that John used to decipher unfamiliar words. John was questioned about his strategy use at the end of each running record. These questions would have made him aware of the assessment emphasis.

The regression curve for the uncorrected accuracy scores shows that no overall progress could be attributed to the programme. That is, the very good progress shown in John's Neale and Burt assessments was not reflected in these running record scores. Instead, the regression line is a curve showing a downturn in scores of 4% followed by an upturn in scores after the Christmas vacation. This initial downturn in accuracy scores will be further discussed in the following miscue analysis, under strategy use.

The self-corrected scores do not show any gains related to the programme. Self-correction of the accuracy scores resulted in flattening the regression curve to nearly a straight line. All the self-corrected accuracy scores except one lay between 92 % and 96%. Replacing the 10–12 year level journal text with the 11-13 year level journal text had resulted in lowering John's band of scores by approximately 2.75 % (see Table 6.1). Journal text graded at a 10-12 year level was independent text. Journal text graded at an 11-13 year level was instructional text.

John was often unable to read words accurately when he first encountered them. Self-correction lifted individual strategy accuracy scores from 2% to 8%. Such a high self-correction level shows that, as in assessments previously discussed, he lacked automaticity for word recognition.

Strategy Use for Word Recognition

John's strategy use was analysed using the strategy categories previously described in Chapter 4. The mean score and range are given as raw data in each category in Table 6.2 so that the small sample sizes can be appreciated. The scores (see Figures 6.7 & 6.8 respectively) for week 18 for the sounding strategy data and week 3 for the initial-letter data have been excluded from the determination of the regression line as they departed markedly from the general trend.

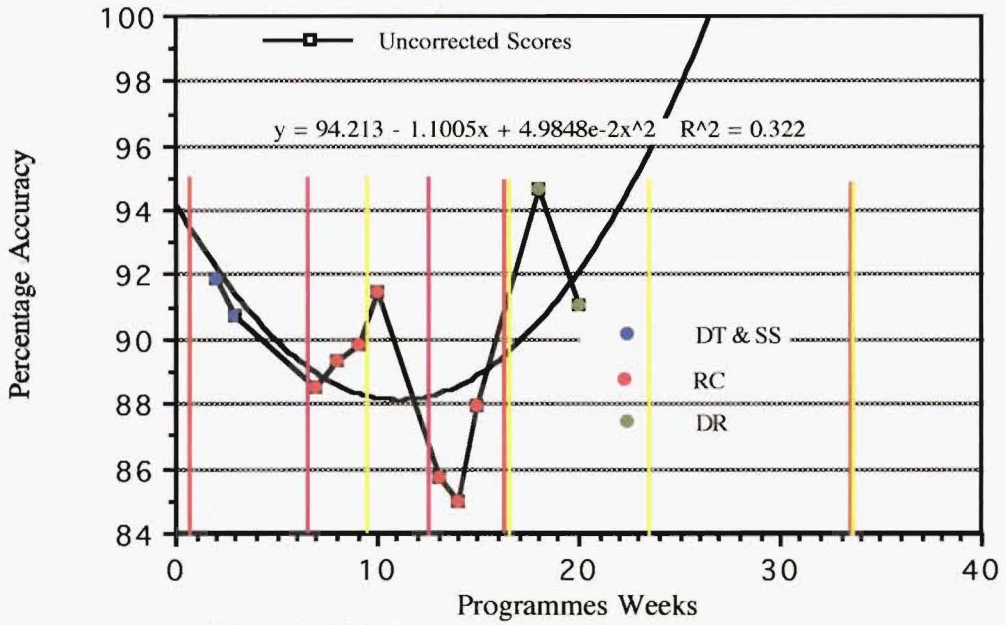

Figure 6. 5. John's uncorrected weekly percentage accuracy scores for the strategy running record series.

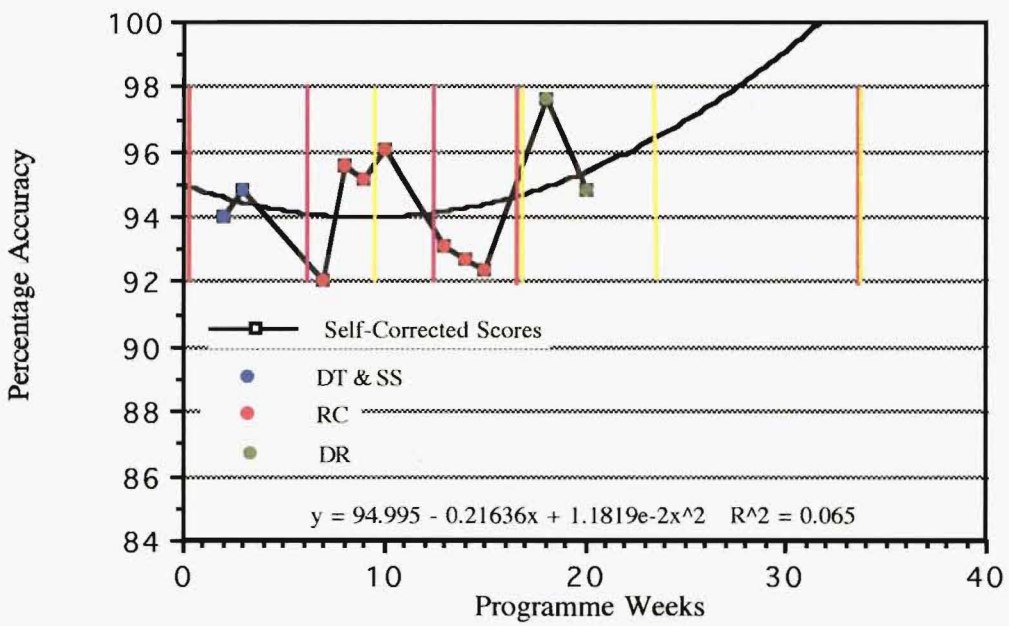

Figure 6.6. John's weekly self-corrected percentage accuracy scores for the strategy running record series.

Relative Proportional Use of Each Strategy

Table 6.2 shows that John usually used a combination of three strategies: sounding, initial-letter and long-look. His long-look strategy consisted of looking at a word for a considerable time. Sometimes he would then give the correct text word and sometimes he would make no response at all. John never gave any explanation of his thinking during these pauses.

Table 6.2. The strategies John used for deciphering his miscues.

	∑ Str. Misc.	Sounding	Initial-Letter	Meaning	Similar Word	Inventing	Long-Look
Mean	18.8	10.4	5.4	0.5	0.6	0.1	1.9
Range	6 -26	1 – 19	2 – 12	0 – 2	0 – 2	0 – 1	0 - 6
Mean %		51.7	29.3	3.4	4.2	3.6	10.9

Note: The values in this table supplement the raw data chronicled in Figures 6.7 – 7.9. ∑ Str. Misc. = sum of the strategy miscues.

The programme changed the relative use that John made of each strategy. He increased his sounding strategy use from an initial range of 30%-50% to a final range of 60-75% (see Figure 6.7). He decreased his use of the initial-letter strategy from an initial range of 40%-60% to a final range of 10%-35% (see Figure 6.8). That is, where initially in the programme he had used the initial-letter strategy slightly more frequently, by the end he was using the sounding strategy as his principal strategy. In addition, he had nearly eliminated the long-look strategy (see Figure 6.9) from his repertoire of strategies. Between week 11 and week 20 he used this strategy to decipher only three words.

The programme, as previously explained, emphasised letter information for reading. As the programme progressed John, through his increasing use of the sounding strategy and decreasing use of the initial-letter and long-look strategies, was using more letter information to attempt to decipher words. Although the programme had not changed his reading accuracy scores, it had been successful in changing John's reading behaviour.

John's scores were low in the strategy running record percentage accuracy series for weeks 13, 14, and 15 (see Figure 6.5). But John had high percentages for sounding miscues in these weeks (see Figure 6.7). Scanning the sounding miscues in these records reveals that John was using his new letter knowledge, and often accurately, to decipher words (cr/cracked, en/encouragement, sper/spray, ex/exhulation/exhultation/x). In this series, attempts at words were treated as indications of a lack of

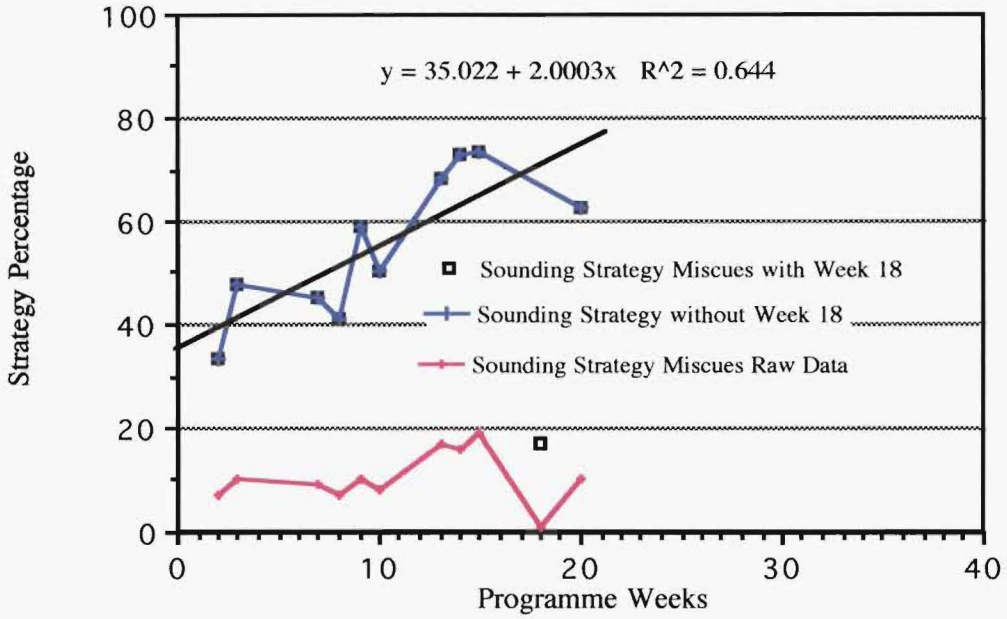

Figure 6.7. John's weekly percentage use of the sounding strategy in the strategy running record series.

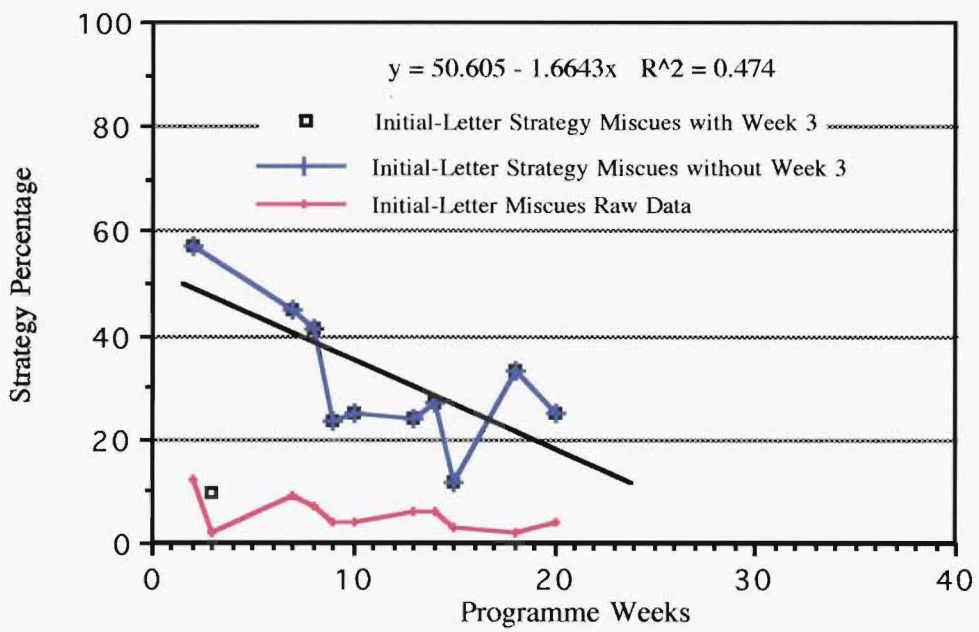

Figure 6.8. John's weekly percentage use of the initial letter strategy in the strategy running record series.

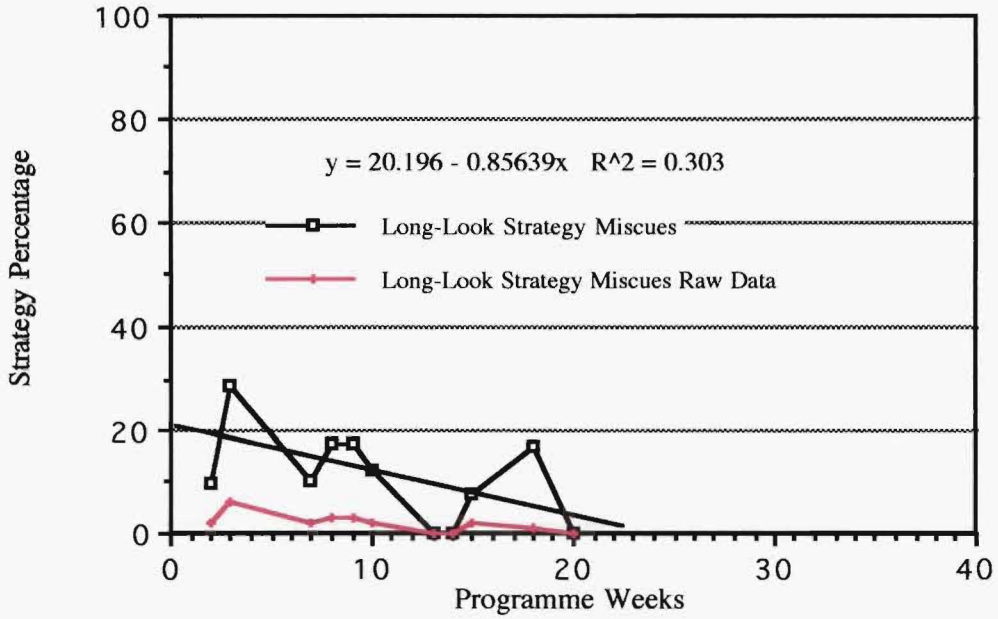

Figure 6.9. John's weekly percentage use of the long-look strategy in the strategy running record series.

automaticity in word recognition and were recorded as miscues. Therefore, changes in John's relative strategy use and lack of automaticity in applying his developing letter knowledge were responsible for the downturn in his uncorrected scores in the strategy running record series for weeks 13, 14, and 15.

Self-Correction Behaviours for Each Strategy

Self-correction was very variable for each of the three strategies with no apparent trend that could be attributed to the programme. The sounding strategy had the highest mean self-correction rate (see Table 6.3) but also the most variable self-correction rate with a range that for the most part lay between 30%-80% (see Figure 6.10). When using the sounding strategy, sometimes John self-corrected often and sometimes he did not.

Table 6.3. The proportion of miscues that John self-corrected for each strategy.

	% Sounding sc	% Initial-Letter sc	% Long-Look corr
Mean	54	40.5	27
Range	14-100	33-44	0-100

Note: sc = miscue self-corrected; sounding = sounding strategy; Initial-Letter = initial-letter strategy; Long-Look = long-look strategy; Corr. = the long-look words for which a correct answer was given.

There were wide swings in self-correction rates between the different texts read (see Figure 6.10, weeks 2, 3, & 7) and between readings within a single text (see Figure 6.10, weeks 7 – 15 and weeks 18 & 20). Scanning the miscues did not reveal any reason why some readings were associated with a much higher self-correction rate than others.

John self-corrected his initial-letter strategy less often (see Table 6.3) and the self-correction rate was consistently within the much narrower and lower range of 30%-50% (see Figure 6.11) The initial-letter strategy is discussed in more depth later in the Chapter.

The self-correction range of scores for the long-look strategy lay between 0%-100%. These extremes in range are the result of samples of one or two words.

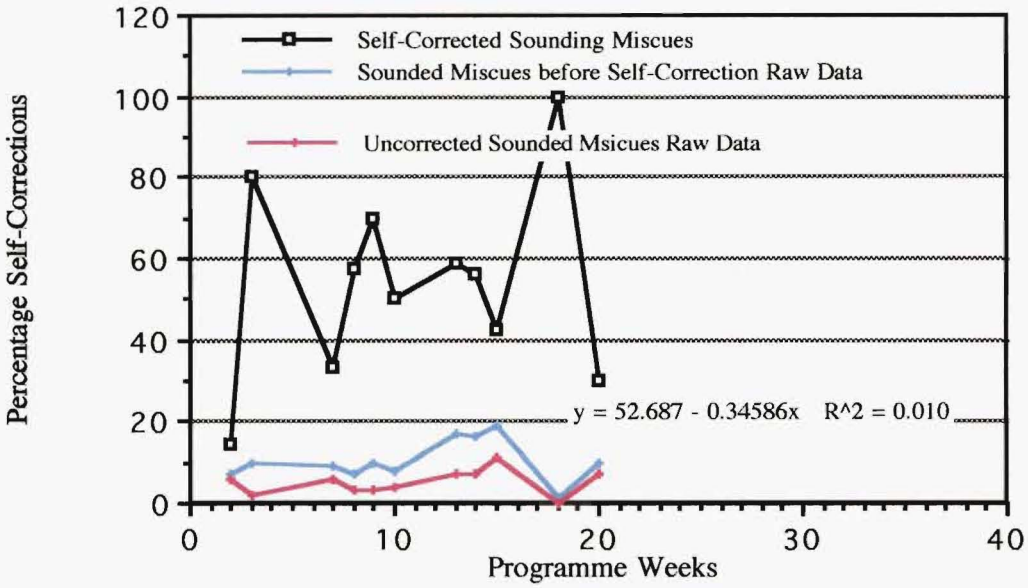

Figure 6.10. The percentage of sounding strategy miscues that John self-corrected for the strategy running record series.

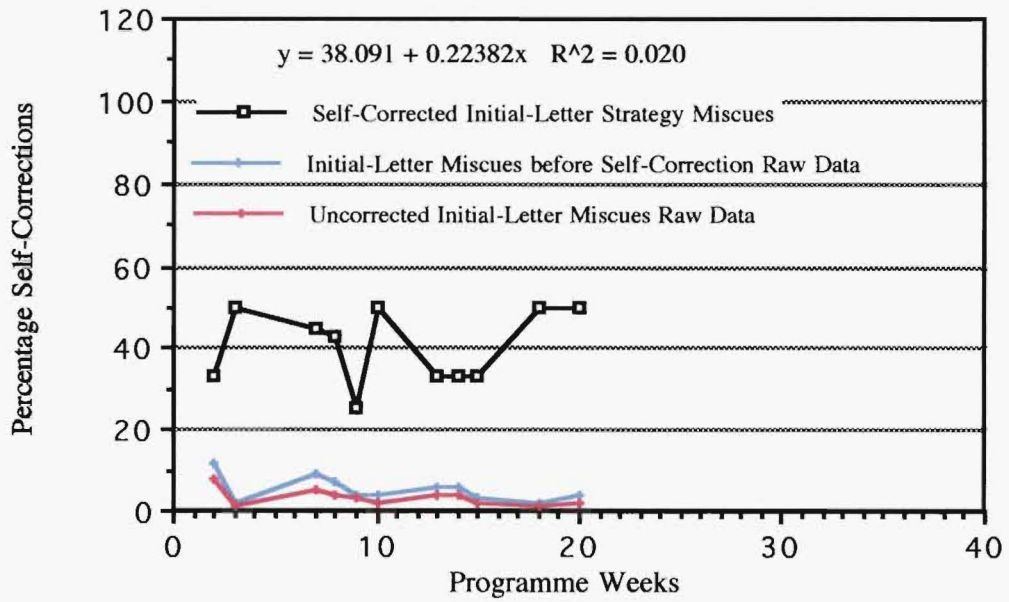

Figure 6.11. The percentage of initial-letter strategy miscues that John self-corrected for the strategy running record series.

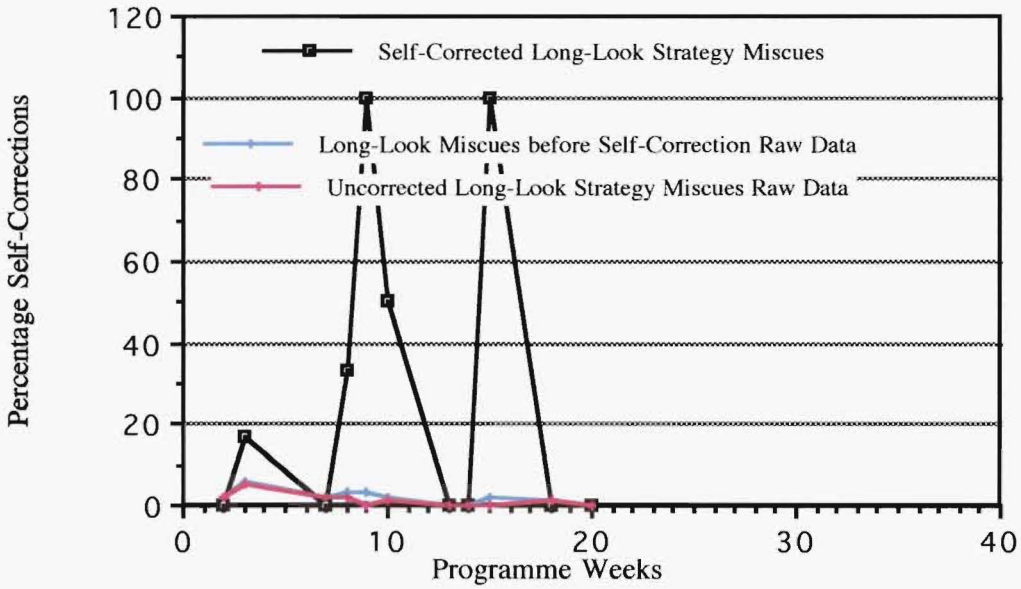

Figure 6.12. The percentage of long-look strategy miscues that John self-corrected for the strategy running record series.

Characteristics of Sounded and Initial-Letter Strategies

When John used the initial-letter strategy, most of his uncorrected miscues were real words that looked similar to the text word (see Table 6.4). That most of these miscues looked similar to the text word indicated that John was using incomplete or inaccurate letter information to identify unfamiliar words. It further suggested that identifying letter information was not an automatic process for John.

Table 6.4. The characteristics of John's sounded and initial-letter strategies.

	% Real Words	% Similar Words	% Meaning Words
	Sounded Uncorrected Miscues		
Mean	23	22	12
Range	0 - 43	0 -43	0 - 33
	Initial-Letter Uncorrected Miscues		
Mean	83	82	40
Range	0 – 100	0 – 100	0 – 80

Note: Meaning Words are words that gave an acceptable meaning within their sentences. This was not necessarily the author's meaning nor did the meaning necessarily fit with the rest of the passage.

Looking at John's use of meaning as an aid to identifying words (see Table 6.4), it can be seen that for both the initial-letter strategy and the sounding strategy half of the real word miscues did not have contextual meaning within their sentences. It appeared from this data that he might be having difficulty integrating the contextual meaning with letter information when he was attempting to read unfamiliar words. In addition, he could not have had a strong expectation that each sentence he read should have a clear meaning.

Comparing his sounding and initial-letter miscues, the initial-letter miscues were:

1.) nearly four times as likely to be real word;

2.) nearly four times as likely to be a similar looking word; and

3.) more than three times as likely to have meaning in the sentence.

John had no way to discern that his miscues that were real words, looked like the text word and had some meaning in the sentence, were not the text word. Also, as stated above, because of years of difficulties with word recognition, he would not have developed a strong expectation that text should

always have a clear meaning. Therefore, he may not have realised that he had miscued if his miscue was a real word and a similar looking word to the text word but without meaning in the sentence.

Interpreted in a different way, John received incorrect feedback to the effect that the initial-letter strategy was a successful strategy for deciphering words. He would not see a need to change his use of this strategy. On the other hand, when John used the sounding strategy, very often his miscues were not real words. He therefore often received realistic feedback that he had miscued when he used the sounding strategy unsuccessfully. He would have thought that he was having more difficulty using his sounding strategy and less difficulty using his initial-letter strategy

Strategy Use and Word Length

The samples, both within each strategy and for the totalled miscues for each syllable, were very small for some running records (e.g. 1- 5 words for the totalled miscues for a particular word length). Therefore, the differences between the percentage values will be distorted because the samples sizes are so small. This effect is particularly in evidence for the three, four and five syllable words (see Figures 6.15 and 6.16) and to a slightly lesser extent for the one-syllable words (see Figure 6.13).

The percentage means in the sounded and initial-letter strategy data (see Table 6.5) were calculated from the percentage data for each week. Distortions from small samples and rounding mean that these percentages do not always add to 100% within a word length category.

John used the sounding strategy for an average of one third of the one-syllable words (see Table 6.5). Figure 6.13 shows that John made an increasing use of sounding for one syllable words during the two 1998 terms. The weekly miscue records give examples of how John was applying his new letter knowledge to one syllable words (sper/spray, stoo/stood, sm/small,/ borin/bor/born. However, the extent of his increase in use may have been magnified by the small sample sizes.

He used the initial-letter strategy for an average of forty percent of the one-syllable miscues (see Table 6.5). That is, he used this strategy a little more often than he used the sounding strategy. Figure 6.17 shows that initially he used it for 80% - 90% of the miscues but in the course of the programme his percentage use had dropped to 10% - 40%

For the two syllable words, John had used the sounding strategy for approximately two thirds and the initial-letter strategy for approximately one third of his miscues (Table 6.5). These usage frequencies remained virtually unchanged throughout the programme (see Figures 6.14 & 6.18). The two-syllable

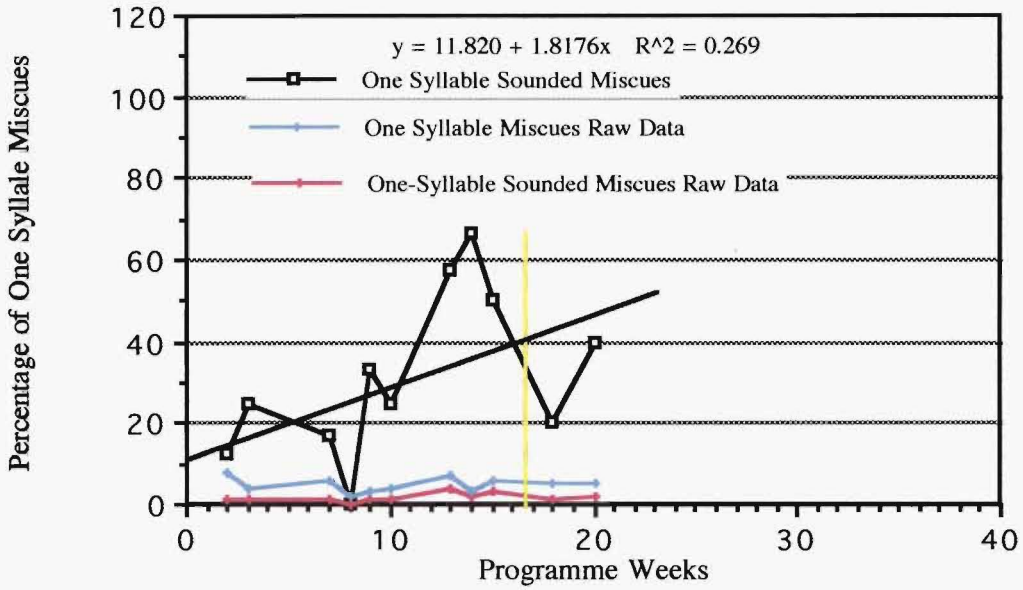

Figure 6.13. The percentage of one syllable miscues for which John used the sounding strategy.

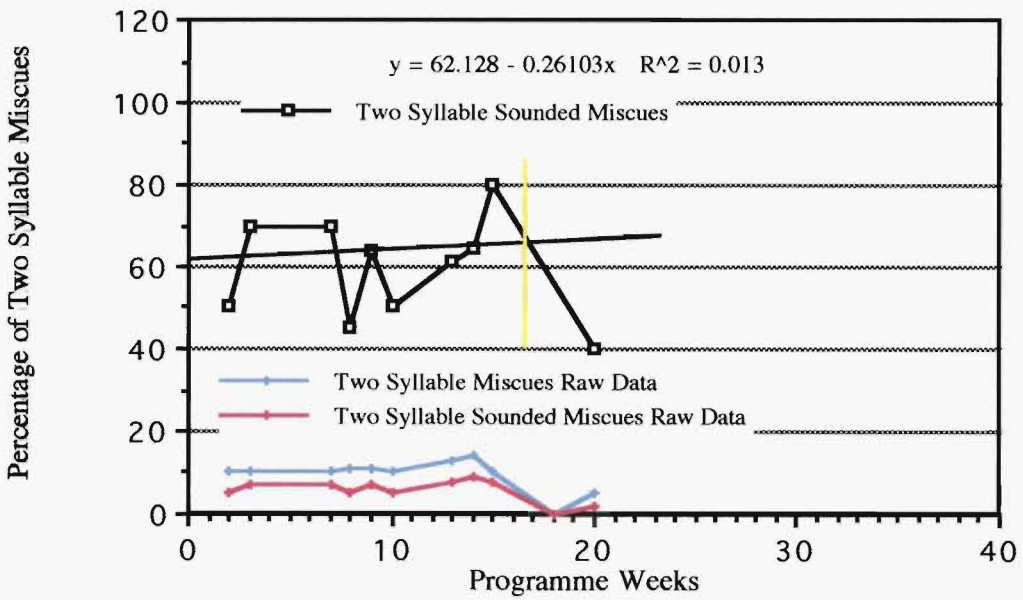

Figure 6.14. The percentage of two syllable miscues for which John used the sounding strategy.

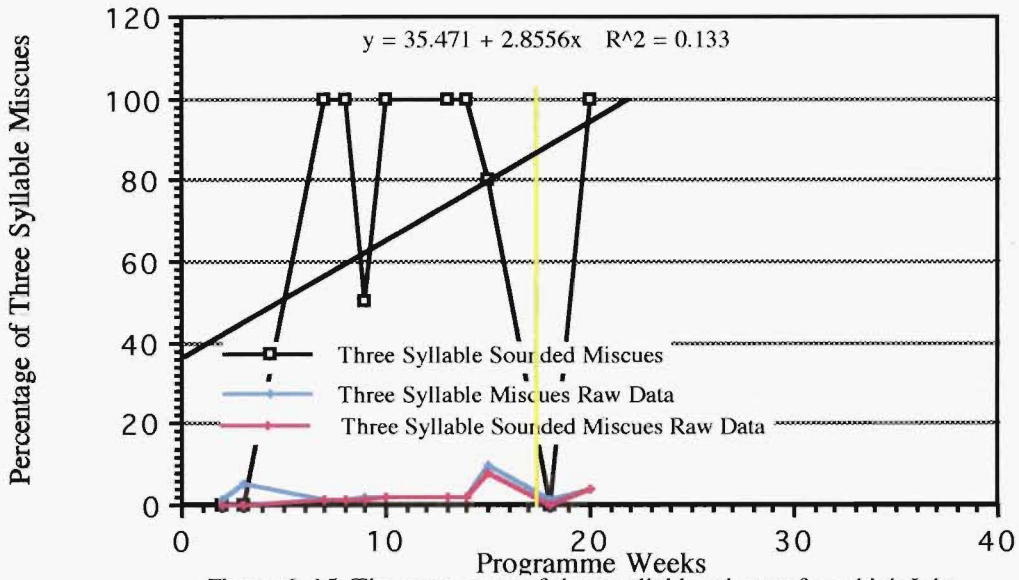

Figure 6. 15. The percentage of three syllable miscues for which John used the sounding strategy.

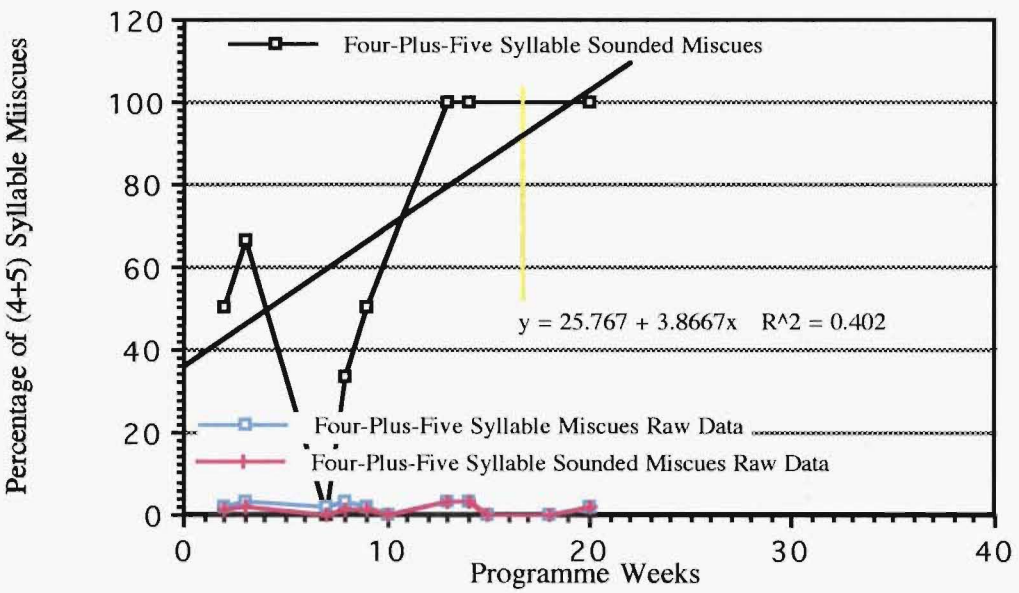

Figure 6.16. The percentage of four-plus-five syllable miscues for which John used the sounding strategy.

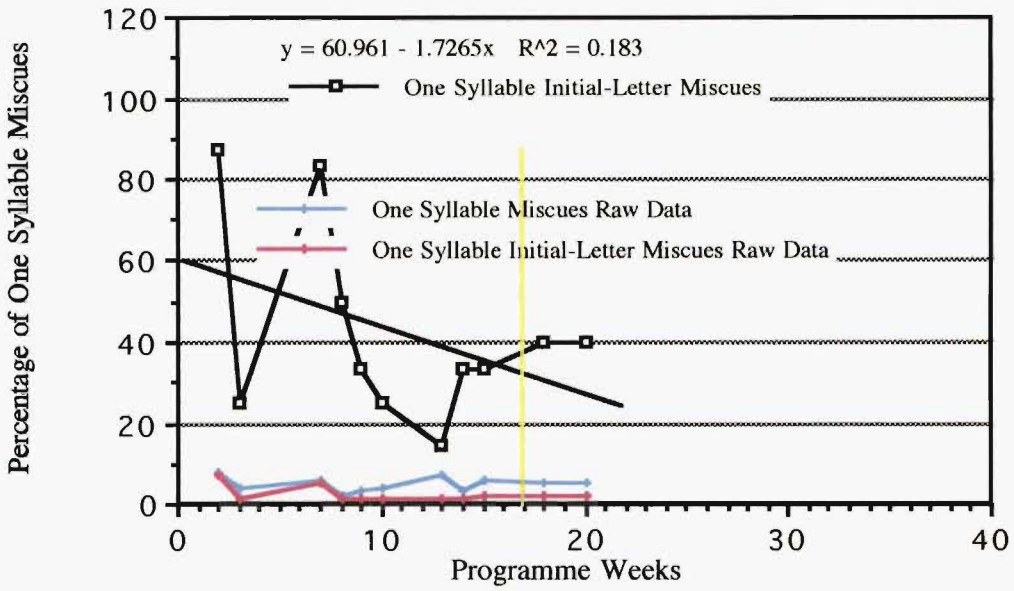

Figure 6.17. The percentage of one syllable miscues for which John used the initial-letter strategy.

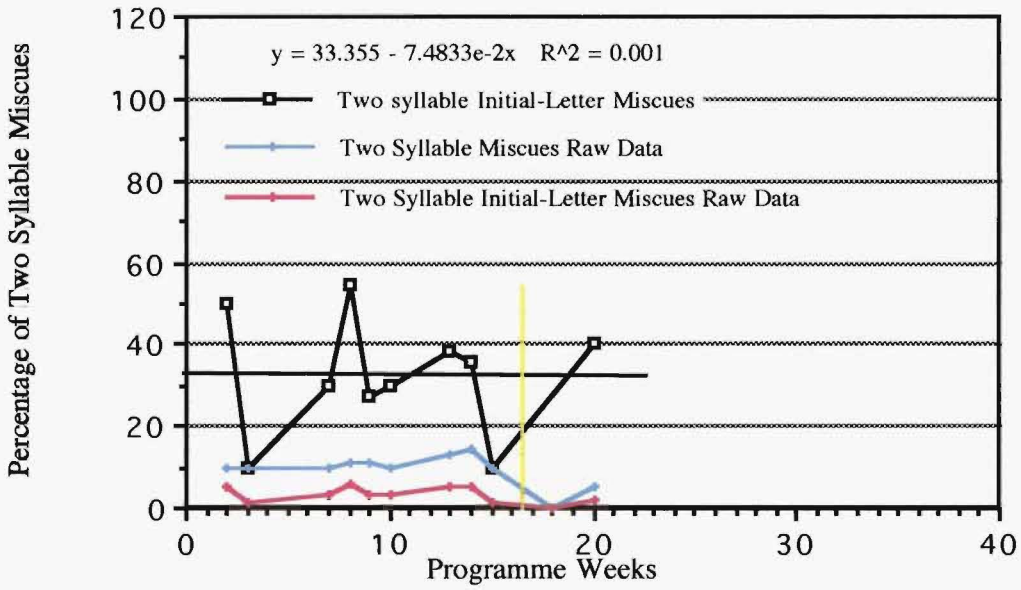

Figure 6.18. The percentage of two syllable miscues for which John used the initial-letter strategy.

data are more robust than the one-syllable data as the total sample size each week was usually ten or more miscues.

For three-syllable words John usually used the sounding strategy (see Figure 6.15) and for four and five syllable words he made increasing use of this strategy (see Figure 6.16) as the programme progressed. This reflected his growing knowledge about letter information and his growing confidence in applying the sounding strategy to longer words as the programme progressed.

Table 6.5. The relationship between John's choice of strategy and the number of syllables in the miscue.

	1 syllable	2 syllables	3 syllables	(4+5) syllables
	Sounded miscues			
Mean %	32	60	66	63
Range	0-67	40 – 80	0 – 100	0 – 100
∑ Words Raw Data	17	63	21	13
	Initial-Letter miscues			
Mean %	42	33		
Range	14 – 88	10 - 55		
∑ Words Raw Data	24	34		
	Long-Look Miscues			
∑Words Raw Data	2	6	7	7
	Similar Word Miscues			
∑ Words Raw Data	5	1	1	
	Meaning Miscues			
∑Words Raw Data	4		1	
	Inventing Miscues			
∑ Words Raw Data	1			

Note: ∑ Words Raw Data = the number of miscues totalled for the complete programme.

John used his long-look strategy in the first two weeks for three syllable words and occasionally for a word in the following weeks. He also used this strategy for four and five syllable words in each of the first five weeks of the programme but not thereafter. During the course of the programme, John began to use the sounding strategy as his main strategy for longer words. It eventually nearly replaced his long-look strategy.

To summarise, John used both the sounding and initial-letter strategies for one-syllable words but, as the programme progressed, he made increasing use of the sounding strategy and decreasing use of the initial-letter strategy. He used the sounding strategy predominantly for multisyllabic words with sounded words accounting for an average of 60% of his miscues. For two syllable words, this average was maintained throughout the programme. For longer words, John increased his use of sounding as the programme proceeded.

Initial-Letter Strategy.

Examples of one and two syllable initial-letter miscues are listed in Appendix N, Tables N1 and N2 respectively. Selected examples of the miscues are given in their sentence context in Appendix N. Tables N1a and N2a.

Inspection of the one and two syllable miscues shows that they are real words that usually have a similar appearance to their correct text word. When the complete sample of words is viewed, the uniformity of the sample is apparent. In this context it can be seen that words that do not have a similar appearance to the text word for a proficient reader probably appeared similar to John.

Looking at the one-syllable words in their context reveals that John predicted several of the miscues from the preceding text (e.g. Appendix N, Table N1a; numbers 8, 9 & 20a). One miscue is a word of similar appearance to the text word that lacks meaning in the sentence (see Appendix N, Table N1a, number 20b) and, finally, one miscue resulted from incorrect syntax (sweeped/swept).

Examination of the two syllable miscues in their sentence contexts (see Table 611A) revealed similar patterns. Some miscues with similar appearance to the text word had been predicted from the context in the preceding sentence (see Table j11A, numbers 8b, 10a, 10b, & 20). Some miscues were real words with a similar appearance to the text word but without meaning in the text (see Table J11A, numbers 8a, 8d & 10c).

The tables of the one and two syllable initial-letter miscues provide corroboration of the data presented earlier on strategy characteristics. Most of these miscues were real words that had a similar appearance to the text word. In fact, when the whole sample is viewed, it appears that, for John, nearly every word had a similar appearance to the text word as was discussed above. In addition, as John frequently predicted words from the context of the preceding sentence more of the miscues in the initial-letter characteristics section may have been meaningful for John within their context although they did not have meaning in the sentence for a proficient reader.

Summary of the Programme Induced Changes for John

John had been taught to read by the then Department of Education's (1985) recommended process of repeated sampling of text, predicting a word from the meaning, then confirming or self-correcting. As a result of this teaching, John's miscues were often real words with a similar appearance to the text word. In addition, John had used contextual meaning to help predict about half of his miscues. In other words, John was applying the word recognition strategies he had been taught in his school reading programmes, but miscueing because he used incomplete and inaccurate letter information.

This programme taught John phonological awareness, letter information, blends and phonograms and the strategies to apply these to unfamiliar words. By February 1999, after only two terms of tuition and in spite of his irregular attendance, John's Burt word recognition and Neale reading accuracy scores both showed accelerated gains of two age equivalent years after two terms of tuition.

The programme was successful in altering John's relative strategy use.

- When he entered the programme John used the initial-letter strategy more often than the sounding strategy. As the programme progressed, he came to use the sounding strategy more frequently than the initial-letter strategy. But this trend varied with the number of syllables in the words being deciphered

- John increased his use of the sounding strategy and decreased his use of the initial-letter strategy for one-syllable words. For short words he began to transfer his developing letter knowledge to situations where he would previously have used the initial-letter strategy. This suggested that John was developing a greater awareness of letter information and perhaps an increasing automaticity for recognising letter information in short words.

- John used sounding for two thirds of the two syllable words and the initial-letter strategy for one-third at the beginning of the programme. He did not change his relative use of these two strategies during the programme. That is, he did not transfer his developing letter knowledge to situations where he used his initial-letter strategy for two syllable words.

- He apparently replaced most of his use of the long-look strategy with the sounding strategy for three, four and five syllable words. John did not use the initial-letter strategy for these words even at the beginning of the programme and gave no information about his long-look strategy. It is therefore not possible to know what change in reading behaviours this change in strategy use

reflected. However, it appears that he was making increasing use of his growing letter information for these longer words.

When he used the initial-letter strategy, John often failed to see the inaccuracies in the letter correspondences between the text word and his miscue. His miscues were usually real words that appeared similar to the text word. Half of these real words had contextual meaning. The feedback from such apparent matches with the text word would often have convinced John that his use of the initial-letter strategy was successful. Therefore, he would not have been aware of a need to change to the sounding strategy in order to incorporate more letter information as he attempted to decipher the words.

Where John's word recognition was assessed using isolated words or text with first; only the story line and little contextual meaning to aid word recognition; and second, words of increasing length but less frequently encountered letter groups, his scores showed accelerated progress. These tests, for which he consistently used the sounding strategy, measured John's growing proficiency for using letter information and the sounding strategies.

Where John was assessed reading journal articles, which contained many one and two syllable words and fairly rich contextual meaning for word recognition, no overall progress was recorded. When he read this text he failed to consistently transfer his developing knowledge of letter information and sounding strategies. Instead he continued to use the initial-letter strategy for a percentage of his miscues with the inaccuracies that characterised his reading before the programme.

John's Strategy Use and Reading Self-Beliefs

John as a Strategic Reader

At the beginning of the programme, John believed that sounding the letters was a good approach to use when he tried to decipher unfamiliar words (Table 6.6, see 25.6.98). If he was initially unsuccessful, he was not persistent. He usually missed the word out unless he later found that it was a key word to understand the meaning. He used the sense the word made in the passage to determine if he had found the correct text word.

By the third week into the section of the programme in which the strategies for applying letter knowledge were taught, he was monitoring whether his initial attempt at sounding was correct or not. At this time he could change the sound of a vowel in a word if he judged that he had not obtained the

correct text word on his first attempt. By the end of 1998, John also knew to try changing the stress if his initial attempt at sounding a word was unsuccessful. He had learned to become more flexible when he applied his letter knowledge to a word.

Table 6.6. The cognitive strategies and metacognitive monitoring of those strategies for determining unfamiliar words that John could verbalise.

Date	Cognitive Strategies For Unfamiliar Word Recognition	Metacognitive Monitoring Strategies For Unfamiliar Word Recognition
25.6.98	*Prospect:* sound it (the word) out proe-spect, then read it out, carry on reading, sometimes miss them out, keep on reading sometimes have to go back because it's a key word to the sentence.	Wrong word if: it doesn't make sense – the sentence – if the sentence sounds right got the right word
24.9.98	Broke the words up, changed the /u/ in Rufus Ruffus/Rufus *Impassable:*got o impossible and saw pass breaking it up.	Questions to ask about strategies: Is it working, should I try something better.
22.10.98	*Consideration, organisation:* changed letter i sound.	
29.10.98	Break it up into letter groups, try to sound them out, sometimes I try to change the letter sound (from short to long vowel or vice versa). If it doesn't work go back and try again, if can't work it out carry on, might know it after reading the rest.	Sounds right with the sentence. If it's the wrong word it wont make sense with the rest of the sentence, then try it again changing some of the sounds.
12.11.98	*Miraculously*: tried to sound it out mir-ach-aly *desperately:* dis-apparently	
17.11.98	*Decision, erosion*: changed vowel sounds	
19.11.98	*Engulfed*: broke up into letter groups.	
24.11.98	*Mournful:* Tried breaking it up, just went mourn-ful *Nonsense:* nosey-ness; *filtered* broke it into letter groups. If hasn't worked pass it, keep on reading and then you go back after read the sentence and try again because may know it.	If not working try something else, changing vowel sounds or stress. Right word: If it makes sense with the sentence. Wrong word: doesn't make sense or doesn't sound right – like if it sounds strange* or something like the wrong word.
18.2.99	Sound them out, break into letter groups or-gan-i-s-ing	Sounds right, does it make sense with the sentence, not the right word wouldn't sound right.

Note: The examples of unfamiliar words in this table were words from the *Neale* texts the levels for which are given for the corresponding dates in Table 6.8 or from the journal text read for that date. *When questioned John agreed that sounding strange = not sounding like a real word.

By the end of the section of the programme in which the strategies were taught, he was showing both flexibility and persistence in applying his letter knowledge. Now he only left a word out and read on after several unsuccessful attempts to determine the word. He regarded reading on as a strategy to determine the correct text word. "Might know it after reading the rest" (see Table 6.6).

John was an active learner. He learned the letter sounds, phonograms and the strategies at home (see Appendix L, Table L1). He also read at home. At first he tackled Bravo, Two Zero at home. Over the Christmas holidays, he and his Mother found a selection of books for him to read. By the beginning of 1999 he was choosing his own books to read from the wide selection in the school reading room and reading them independently at home.

John's chosen books had an easier level of word recognition than Bravo Two Zero. However, it was important that John was now assuming responsibility for his own reading. It was truly sad that his severe depression ended such good progress.

John was not the learned helpless reader postulated in the literature (Stanovich, 1986). He quickly assimilated the strategies and letter knowledge that were taught to him and used them to aid his word recognition. He learned to decide whether or not he had the correct text word. He also learned to evaluate whether his sounding strategy had worked and, if not, to change it.

In fact, John was an active learner who revised his new knowledge for word recognition at home. He read of his own volition at home. He would tackle difficult text. He began to take responsibility for choosing his own books. His accelerated gains shown by the standardised Neale and Burt scores reflected this active engagement in his own learning.

John's Causal Attribution Beliefs

John was asked to rate his reading ability in comparison with his cohort (see Table 6.7). He considered that his silent reading and reading comprehension were average or above average but that his oral reading and speed of reading were average or below but not in the bottom group for his cohort. His self-ratings about his reading ability were slightly optimistic for his oral reading and very optimistic for his silent reading. When he began secondary school he was placed in a special needs class as previously mentioned. He, therefore, probably rated his reading ability in comparison with the others in this class.

It would have been difficult for John to rate his silent reading. Adolescents probably rate their silent reading achievement and comprehension by comparing what books and how many books they read in comparison to other class members. It is unlikely that this sort of exchange was part of life in a special needs class. With no method of rating available, John maintained overly optimistic beliefs about his silent reading.

Table 6.7: John's ranking of his reading ability in comparison with the other pupils in his school cohort.

Date	School Year	Silent Reading	Oral reading	Comprehension	Speed of Reading
22.6.98	9	2	3	3	3
3.11.98	9	3	4	2	3
15.2.99	10	2	4	3	4

Note: John rated his ability on a 1-5 scale. On a par with the best readers in the school = 1. The questions used to obtain the self-belief data are presented in Appendix F, Question 6a.

John ranked his oral reading and speed of reading as average or below, but not in the bottom group for his cohort. When he was reading he sometimes had difficulty pronouncing a word although he said he knew the word and its meaning. Difficulties with pronunciation when reading aloud would lead John to believe he was better at silent reading than he was at oral reading His pronunciation difficulties are discussed later in the language profile section.

In a class situation he would hear himself and other class members read aloud. His self-beliefs about his oral reading and speed of reading would be further formed by his comparison of his reading proficiency with that of other class members

In addition, John knew that he came out of class for reading tuition; reading tuition where he read aloud. Withdrawal from class for remedial tuition would have given John the message that his reading, and particularly his oral reading, was not as good as that of other pupils.

Unfortunately John's reading programme finished early. There was, therefore, no information on his causal attribution beliefs or his self-efficacy at the end of the programme. At the beginning of the programme, he rated a Level Four passage from the Neale Diagnostic Tutor as easy reading (see Table 6. 8). In his Neale reading accuracy assessment he had achieved an accuracy rate of 81% for a

Level Four passage. That is, John rated a text as easy reading which would for him have been placed at the bottom of Clay's (1985) hard text classification. He had no experience of effortless fluent reading.

Table 6.8: John's estimated percentage accuracy scores and his causal attribution beliefs for reading his easy-to-read and hard-to-read Neale Diagnostic Tutor passages.

Date	E:H	N	% Acc	Know/Don't Know	Guess/Didn't Guess	Try/Didn't Try
24.6.98	E	4	81	3	3	1
24.6.98	H	6	—	3	3	2

Note: The questions for Mark's causal beliefs are given in Appendix D. Mark's beliefs about his reading knowledge and behaviours are measured on a 1-5 scale. Know = 1, Guess = 1, Tried Hard = 1. Know = know the best ways; E = easy; H = Hard; N = *Neale* level for the Diagnostic Tutor passages; % Acc. = John's percentage accuracy score obtained when he read an alternate Neale Form 1 or Form 2 passage of the same level of difficulty.

John believed that for this Level 4 text that he had rated easy to read:

- it was of an average difficulty for him to read, neither easy nor hard;
- he could usually read a page of it without help;
- he had an average knowledge about how to read it;
- he guessed about half of the words; and
- he tried very hard to read it.

John believed that, for text he rated as easy to read, he would have to guess words and that he might not always know how to read the words. In spite of these difficulties, he believed that he would not usually require help (see Table 6.9).

John rated the Level 6 Neale passage as hard to read (see Table 6.8). In his Neale reading assessment, the Level Six passage was two levels above the Level 4 passage where he achieved his test ceiling. John's hard to read text would have been considered impossible to read by most average readers.

Interestingly, John's self-efficacy and causal attribution beliefs were very similar for the Level 4 and Level 6 text. The only differences were that he thought he might have a little more difficulty reading a page without help and that occasionally he would not try hard (see Tables 6.8 and 6.9).

John's assessment results indicated that these Level 4 and Level 6 texts would be extremely difficult for him to read on his own. For texts of these difficulty levels, John had very positive causal attribution and self-efficacy beliefs about his ability to read them and his knowledge on how to read them when he entered the programme. With these positive self-beliefs he was an active learner. He would tackle text that was difficult to read. He was active in learning and applying the information and strategies taught in the programme. His Neale and Burt assessment results are a testament to the progress he made because he was an active learner with positive self-beliefs about his ability to read, his knowledge to read, his self-efficacy to complete a task and his continued application of effort when the task was very difficult.

Table 6.9: John's estimated percentage accuracy scores and his self-efficacy judgements about his ability to read his chosen easy-to-read and hard-to-read passages from the Neale Diagnostic Tutor.

Date	E:H	N	% Acc	Can Read Page/Can't Read Page	Easy to Read/Hard to Read
24.6.98	E	4	81	2	3
24.6.98	H	6	—	3	3

Note: The self-efficacy judgement questions about ability are given in Appendix D. John's self-efficacy judgements about his ability to read the page are measured on a 1 – 5 scale. Can Read = 1; Easy to Read = 1; E = easy; H = hard; N = Neale level from the Diagnostic Tutor; % Acc. = John's percentage accuracy score obtained when he read an alternate Neale Form 1 or Form 2 passage of the same level of difficulty.

John's Language Profile

John had difficulties with pronunciation of words. These difficulties were of two types. The first was in saying the word. Sometimes John would say that he knew what the word was but could not pronounce it (proxminity/proximity, mirachaly/ miraculously, safely,saftes/safest). His second type of difficulty seemed to be a result of not discriminating the sounds in words clearly (wif/with, frough/through, serous/serious, agains/against, twawlers, trawlers,).

His vocabulary (see Table 6.10) at the beginning of the programme was in the low average range. Unfortunately, because his programme finished prematurely, no final assessment was possible. John frequently had difficulty expressing himself in conversation and often could not find the words to say what he was thinking.

Three of John's CELF-3 subtests (Semel, Wiig, & Secord, 1995) (see Table 6.10), Word Classes (associating related words), Recalling Sentences (immediately recalling spoken language) and Word Associations (the semantic organisation to generate words and ideas around a topic), were in the average range but on or below the mean. His Formulated Sentences subtest score was below average because he could not give a sentence using conjunctions such as 'while', 'until', 'although', 'either', and 'however'. Language problems were also evident from the miscues involving syntax that have been recorded previously.

Table 6.10. John's standardised scores for the Peabody Picture Vocabulary Test-Revised (PPVT-R) and selected subtests from the Clinical Evaluation of Language Fundamentals-Third Edition (CELF-3).

	1998		1999	
	St. Score	PR	St. Score	PR
Peabody Picture Vocabulary Test — Revised				
	89	24	—	—
Clinical Evaluation of Language Fundamentals — Third Edition				
Subtests.				
	10	50		
Word Classes				
Formulated Sentences	6	9		
Recalling Sentences	8	25		
Word Associations	9	37		
Rapid Automatic Naming	Errors: 0/3	Time: 49/65 secs:- Equivalent Age 13+ years.		

Note: St. Score = standard score; PR = percentile rank; secs. = seconds.

As previously discussed, John was taught to read in accordance with the then Department of Education model (1985) that involved predicting words from contextual meaning and syntax using minimal letter information. John, with his poor word recall, his low average vocabulary and his difficulties with syntax, would have found reading by predicting words from the meaning difficult.

The effect of difficulties with word recall, vocabulary and syntax were likely to be contributing to the fact that, for the initial-letter and sounding miscues, only half and one eighth had meaning within their sentences respectively. These effects are well demonstrated by the miscues presented in Appendix N, Tables N1a and N2a. Many of these miscues appear similar to the text word, as already discussed, but not all of them have meaning or correct syntax in their sentences.

At the beginning of the programme John had very obvious difficulties with phonemic awareness (see Table 6.11). He could hear spoken rhymes, syllables and phonemes in words but he showed difficulty breaking a word, particularly a four or five syllable word, into its syllables and severe difficulty breaking even a three letter word up into its phonemes.

Table 6.11. John's raw scores for the subtests of the Queensland University Inventory of Literacy (QUIL).

Queensland University Inventory of Literacy

Subtests	P/Sc	Raw Scores							
		1998				1999			
		15/6	26/8	29/10	23/11	22/2	22/4	27/7	19/10
Nonword Spelling	24	3	4	4	6	9			
Nonword Reading	24	0	12	12	13	18			
Syllable Identification	12	11	12		11				
Syllable Segmentation	12	6	5		12				
Spoken Rhyme	12	11	12		12				
Visual Rhyme									
Spoonerisms	20	14	18		16				
Phoneme Detection	12	9	11		11				
Phoneme Segmentation	12	0	7		7				
Phoneme Deletion	10	6	9		10				

Note: P/Sc = possible score.

Pronunciation problems reflected these difficulties. John did not discriminate the order of the sounds in a syllable (proxminity/proximity, safely/saftes/safest) and whole syllables (marachaly/ miraculously, serous/serious) in words. Neither did he discriminate the phonemes in words accurately (wif/with; leafs/leaves, agains/against, twawlers/trawlers).

By the end of 1998 he had learned to break words into syllables. He made a lot of progress breaking words into their phonemes in the first two months of the programme when this was actively taught but his scores indicate no further progress by the end of the year. In retrospect, it may have been of benefit to John to continue to actively teach phoneme segmentation.

At the beginning of the programme John could not read non-words (see Table 6.11). By the beginning of 1999 he had greatly improved at this task. This was a measure of his gains in

understanding and application of letter knowledge to reading words. His non-word spelling had also improved although spelling was not taught in the programme.

There is evidence that deficits in phonological processing abilities have a causal relationship with difficulties in word recognition (Bradley & Bryant, 1983; Gillon & Dodd, 1995; National Reading Panel, 2000; Stanovich, 1986). John showed difficulty both with breaking words into syllables and into phonemes. This programme actively taught phoneme segmentation, letter-sound knowledge and strategies to apply this knowledge. By February 1999, after only two terms of teaching, John had made gains in syllable segmentation, phoneme segmentation and non-word reading and spelling. He had made accelerated gains in word recognition on standardised tests where he could only make restricted use of or could not use his previously learned strategies for reading. For John, it appears that deficits in phonological processing abilities had a causal relationship with his difficulties with word recognition.

John's Story

John was admitted to the programme because of his very severe difficulties with word recognition. He was inconsistent and inaccurate reading frequently occurring one and two syllable words. He could decipher some multisyllabic words but his reading of two or more syllable words was characterised by inaccuracies in reading letter groups and syllables, a high self-correction rate and a variable but usually very slow reading speed. His miscues were often words with the same initial letter and a similar appearance to the text word. Many lacked contextual meaning.

John entered the programme with the self-efficacy to read very difficult text. He rated as 'easy-to-read' text passages that would have been very difficult for him to read, thus demonstrating his lack of understanding of the 'easy' fluent reading that most students enjoy.

His beliefs about his reading ability were optimistic to very optimistic as he believed that he was average or above at silent reading, oral reading, reading speed and comprehension. He believed that he knew the best ways to read about half the difficult words, that he tried hard to decipher them but that he resorted to guessing for about half of his attempts.

He entered the programme believing in the effectiveness of the sounding strategy. As a consequence, he frequently attempted to sound difficult words but believed that he would often be unsuccessful.

When he believed he could not decipher a word, he lacked persistence in his efforts and missed the word out. He knew to use the meaning of the sentence to monitor his efforts.

Phonological processing problems were evident in his difficulties with segmenting words into syllables and phonemes. His lack of knowledge of letter-sound associations was apparent in his zero QUIL score for non-word reading. His problems with integrating letter-sound knowledge and contextual meaning were evident from the fact that only half his initial-letter and sounded miscues that were real words, had contextual meaning.

John had good listening comprehension and had been a member of his intermediate school's second Cantamath team. But he had a further cluster of difficulties that would have also contributed to his difficulties with word recognition He had difficulties with the pronunciation of words and word recall. His PPVT-R vocabulary score was low average and he lacked syntactic knowledge. His CELF-3 Formulating Sentences subtest was lowered by his problems with using conjunctions when he was constructing sentences.

John entered the programme with very poor word recognition, although he had good listening comprehension. His word recognition problems appeared to be the result of a cluster of difficulties which included phonological processing problems, lack of letter-sound knowledge and difficulties with integrating letter-sound knowledge and contextual meaning, along with poor vocabulary and language difficulties. He had optimistic to very optimistic beliefs about his ability to read. He perceived that reading was a very difficult task but he made self-efficacy judgements about his ability, which allowed him to tackle difficult text. He believed that sounding was an effective strategy, but did not believe that he was always effective in using it. He knew to self-monitor his deciphering attempts using the meaning of the passage.

Sadly John was absent fairly frequently through the third term of the programme. Finally, he dropped out at the beginning of the fourth term as he had developed severe depression. His teaching and assessment record is therefore incomplete. However, during the two 1998 terms and over the Christmas vacation John made accelerated progress with word recognition.

During the course of the first two terms and over the Christmas vacation, his self-beliefs about his ability for oral reading and speed of reading dropped to below average but he continued to believe he was average or above for silent reading and comprehension. Despite his less positive beliefs about his ability, he continued to make positive self-efficacy judgements about his ability to read difficult text.

John was a mastery oriented learner. As a result of his positive reading beliefs and positive self-efficacy judgements, he changed his reading behaviours. He increased his use of the sounding strategy for words of one-syllable and multisyllabic words of three or more syllables. He became more persistent in his efforts at sounding difficult words. Within three weeks of the start of the strategy section of the programme, he was metacognitively monitoring his use of sounding. When he perceived that his initial sounding strategy was not working, he changed his strategy use. He had become more consistent with his use of the sounding strategy use and more persistent and flexible with its use when he was initially unsuccessful at deciphering a word.

He worked independently at home. He learned his letter-sound knowledge and strategies. By the beginning of 1999, he was discovering 'easy' fluent reading. He could choose his own books and read them independently.

John improved his phonological processing as a result of the programme teaching. He leaned to segment syllables and had made progress in learning to segment the sounds in words. His QUIL non-word reading scores showed that his letter-sound knowledge improved as a result of his improved phonological processing, the programme teaching and his independent learning.

As a consequence of his adaptive strategy use and his independent work at home, John's Neale and Burt scores recorded progress of two age equivalent years in February of 1999. After only two terms of teaching, John's positive beliefs in the sounding strategy and in his ability to read enabled him to learn and fairly consistently practice his letter-sound and sounding strategies with persistence and flexibility. These reading behaviours had brought accelerated progress on tests which provided little contextual meaning but which measured John's word recognition ability for words with an increasing number of syllables and less frequently encountered letter groups.

John's fluency and self-corrected strategy running records lay in Clay's (1985) easy reading and instructional categories respectively. Neither showed any overall change during the programme. For these two series of running records, John read journal text with its high number of one and two syllable high frequency words and fairly rich contextual meaning. John fairly consistently used his initial-letter strategy for a proportion of these words with a resultant lack of reading accuracy. Hence the accelerated progress recorded for the Neale and Burt was not reflected in these tests.

The literature proposes a risk/resiliency construct (Bender et al., 1999). The risk refers to circumstances in a student's life such as poverty, marital discord, violence at home or at school and

learning disability. Resilience is the student's ability to surmount such obstacles and avoid serious consequences such as depression or perhaps even suicide.

John's risk factors were not assessed but some became obvious during the programme. He had difficulties with phonological processing, letter-sound knowledge and language, which had led to continuing failure in literacy. He was a slow moving, slow speaking, inarticulate lad and therefore an easy victim for playground teasing. His Father had left home five years previously. Perhaps as a result of these factors, or perhaps as a result of other factors, John developed severe depression which impeded the accelerated progress he was making with his reading.

Yet, despite his many years of failure, he held mastery beliefs about his ability to read. He tackled very difficult text independently. He believed in the effectiveness of the information and strategies he was taught in the programme. He worked independently to learn the information and strategies and applied them. He changed his reading behaviours. As the programme progressed, he used his developing repertoire of strategies consistently, persistently and with flexibility. He was not learned helpless despite his many years of reading failure.

John displayed mastery beliefs in his independent learning and in his practice of the use of the letter-sound information and strategies he was taught in the programme but he did not display resilience to the factors leading to his severe depression. As a result, he made accelerated progress in his reading programme until his behaviours associated with his severe depression impinged on his reading progress and he could no longer attend school.

CHAPTER 7

Case Study 4: Susan

Susan joined the programme as a 14-year-old, Year Ten adolescent. Her Neale Form I (Neale, 1988), equivalent age score for reading accuracy was 8.5 years. Her informal listening comprehension test using the Neale texts gave an equivalent age score of 12.4 years. She scored an age level percentile rank of 57 for the school's Progressive Achievement Test of Listening Comprehension (Reid, Johnstone, & Elley, 1994). Comparison of Susan's reading accuracy score with her two listening comprehension scores showed that Susan fulfilled the criteria for a reading disability because her extremely poor word recognition was preventing her from achieving her likely reading comprehension potential (see Table 2.1).

Susan's Father ran marathons and didn't read at all. Her Mother enjoyed reading. Her choice of books included historical novels by Catherine Cookson, books by Stephen King and murder mysteries. The family belonged to a library, had a set of encyclopaedias and owned a dictionary.

When she was six, Susan had had six weeks remedial instruction with another child. This was not Reading Recovery. In Year Nine she received half an hour three times a week with a teacher's aid. This Year Nine teaching included some letter-sound knowledge.

In week seven of the programme, Susan came to her Thursday lesson in a very animated state. She burst into the reading room announcing to everyone that she had read for hours the night before (approximately from 3:30 after school until 9:30 at night with only a short time out to have her tea). *The Evil Summer* by R. L. Stine was a 'cool book' she said. Many months later she confided to me that this was the first time she had been able to access the meaning of a book when reading silently.

During the course of the programme, Susan also confided that learning the English vowel sounds had made a difference. She had been trying to use Maori vowel sounds to help her recognise the words.

Unfortunately, Susan's attendance during 1999 was very irregular. This was in part due to school events such as school examinations and participation in the school production and in part due to her contracting measles and to an accident where she had some front teeth knocked out.

Susan's Reading Programme

Susan received the programme described in Chapter 2 for phonological processing, letter-sound knowledge, cognitive strategies for word recognition and metacognitive strategies for monitoring for miscues and the effectiveness of her strategy application. She did not readily learn the strategies for monitoring the effectiveness of her cognitive strategy application. Because the letter-sound information and cognitive strategies involved a lot of learning, for Susan the strategy monitoring aspects of the programme were not emphasised. However, she was taught the 'change' strategies.

Initially, in weeks 13-16, Susan, like the other participants in the programme, was encouraged to believe that she had the ability to learn to read well if she worked hard at using her developing knowledge and strategies (Licht & Kistner, 1986; Weiner, 1985). But towards the end of the second term, it became evident from her comments that she thought she was a very good reader and did not need to use her new knowledge and strategies. She was then encouraged to believe that her ability to read unfamiliar words was not sufficient, but she could learn to read these words if she practised her new knowledge and strategies. She was still encouraged to believe that she could have control of her learning.

Susan's Reading Profile

Standardised Assessments

Susan's Neale Form 1 scores (Neale, 1988) were consistently three or four months higher than her Neale Form 2 scores (see Figure 7.1). Inspection of the distribution of miscues for the alternate forms did not reveal any obvious reason for this difference. Both sets of scores showed a similar amount of progress with an increase of just over a year (Form 1: 8.4–9.6 years, Form 2 8.2-9.3 years) by the end of the programme. The regression lines for Forms 1 and Form 2 accounted for a very high 97% and 89% of the variance respectively.

Before the programme commenced, Susan did not attempt words such as 'sheltered', 'shoulder' and 'rested'. At the end of the programme, she was able to recognise some more difficult words (imagined, searched,). In addition, she actively attempted to read more words (reached/resisted/rested, mysteries/mysterious). However, there were still many words she did not attempt (obtained, retreated, cautiously, assistance).

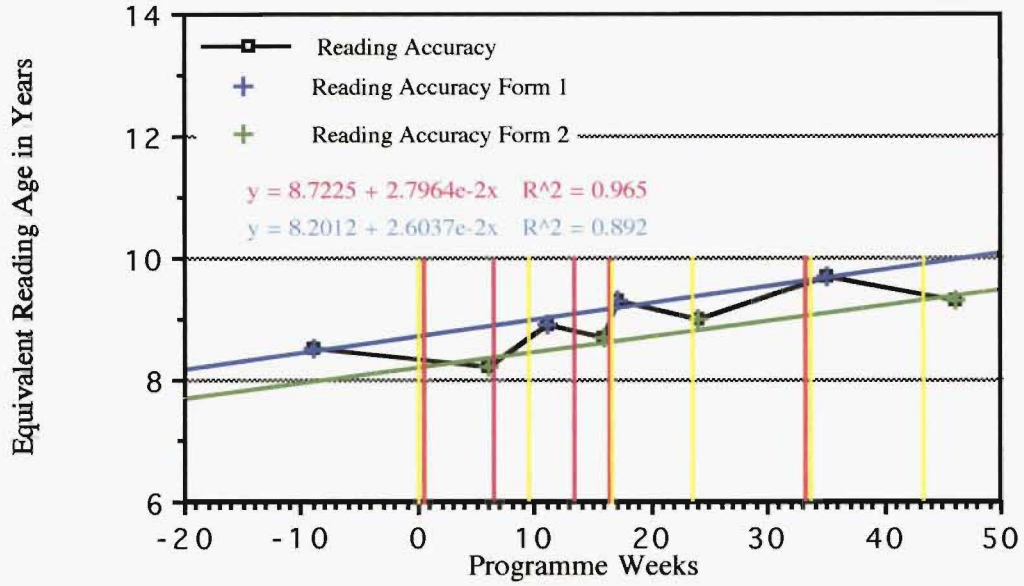

Figure 7.1. Susan's Neale Reading Accuracy age equivalent scores.

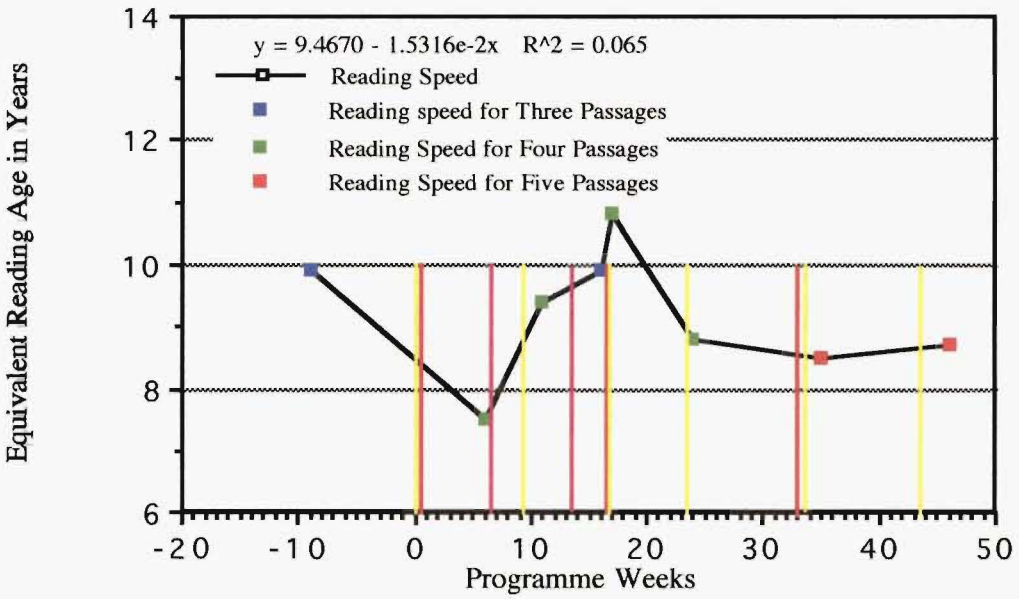

Figure 7.2. Susan's Neale Reading Speed age equivalent scores.

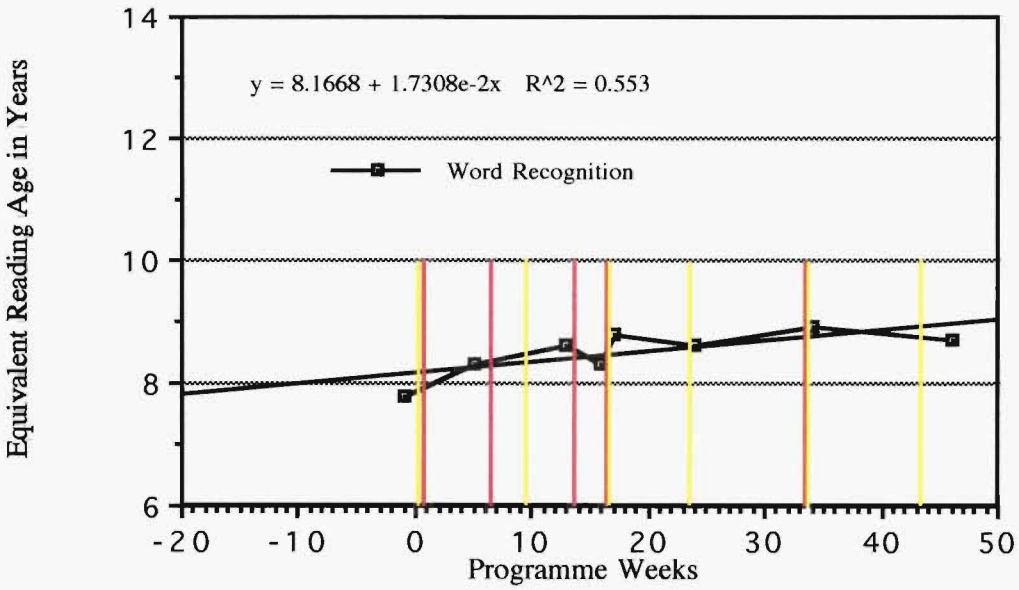

Figure 7.3. Susan's Burt Word Reading age equivalent scores.

Susan's Burt Word Reading scores (Gilmore, Croft, & Reid, 1981) (see Figure 7.3) also showed a year of progress from 7.7 years to 8.8 years at the end of the programme. At the beginning of the programme, she could read the one syllable words (love, things, wet) although she was not always accurate with her word recognition (now/new, said/sad).

At this time, she could read a few two syllable words (scramble, twisted) but was often inaccurate (shovel/shelves, success/serious) and frequently omitted word endings (quick/quickly, know/known project/projecting). She did not attempt most of the multisyllabic words.

By the end of the programme, she could recognise more of the multisyllabic words (circumstances, nourishment) but was still inaccurate with some words (seniors/serious, shovels/shelves, tour/terror) and word endings (know/known, project/projecting). The fact that her Neale scores were six to nine months higher than her Burt scores suggested that Susan used word context to aid her word recognition when she was reading text.

Susan's overall reading speed (see Figure 7.2) was slow and usually lay between the equivalent age scores of eight and ten years. However, from listening to her reading, it was evident that she was very fluent when reading the words she knew. It was the number of words that she did not immediately recognise as she encountered them that reduced her reading speed scores.

For Susan, the programme was successful. Once she learned to comprehend the meaning of the text when reading silently, she read for fun and often with enthusiasm. She completed many books (see Appendix O, Table O1). The amount of reading she did is likely to have contributed to her steady progress. Her Form 1 and Form 2 Neale results and her Burt results all showed that there had been a steady increase in her age equivalent scores. She could recognise more words of two or more syllables and was fluent when reading many words. Unfortunately, there were still a large number of words she had difficulty reading. The time taken to decipher and often to self-correct these words accounted for her slow reading speed.

Weekly Fluency Running Record Assessments

Most of Susan's percentage accuracy scores (see Figure 7.4) for the first two terms of the programme lay between 94% and 96%. The regression line shows a small 2% decrease in scores for these first two terms. At the beginning of 1999, her scores showed large swings, but by the fourth term of the programme they became more consistent and lay above 95%. The score for the 32nd week was the exception. Susan easily became over excited when holidays or other events were approaching. It is

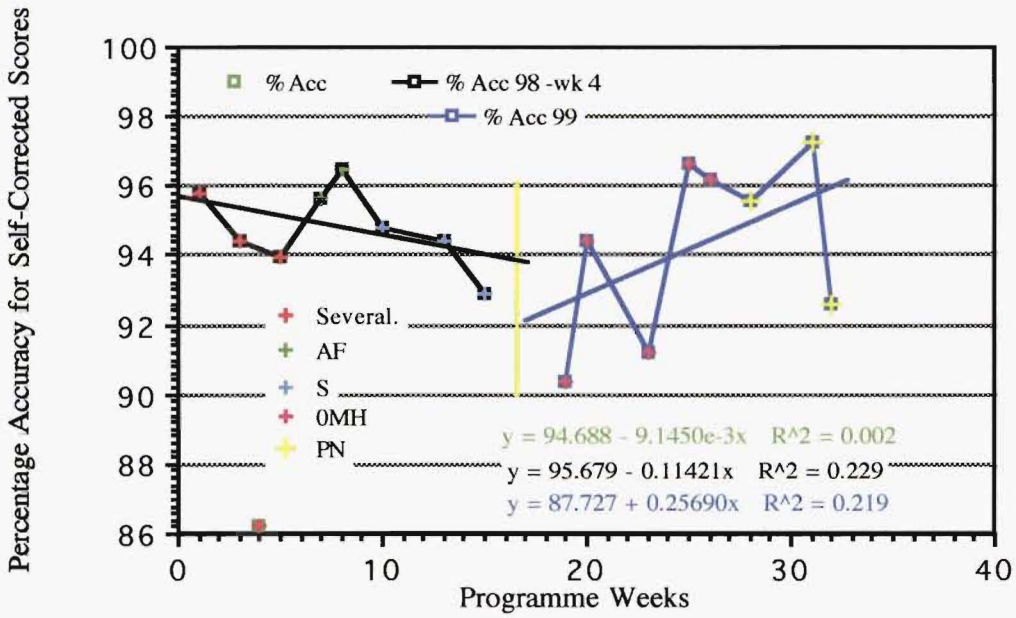

Figure 7.4. Susan's weekly self-corrected percentage accuracy scores for the fluency running record series.

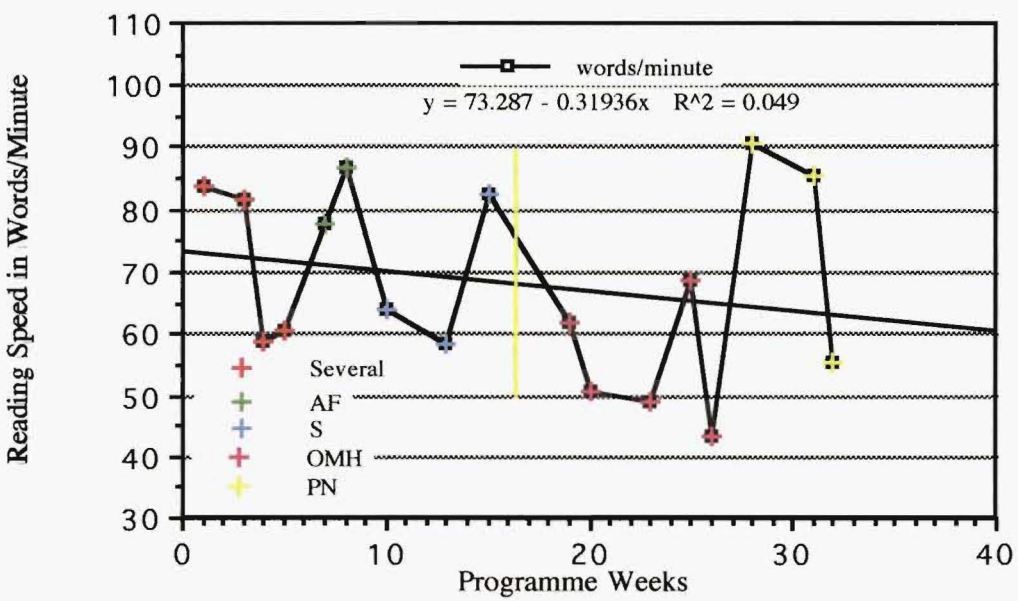

Figure 7.5. Susan's weekly reading speed scores for the fluency running record series.

likely therefore that at the end of the fourth term, she lost concentration and her score for week 32 was consequently lowered.

Table 7.1. Susan's percentage accuracy and reading speed means for the weekly fluency and strategy running record series.

Assessment Name	Programme Week Numbers.	Mean
Fluency RR % Acc.Graph '98-'99	1-33	94.0%
'98	1-16	93.8
'99	17-32	94.5
Fl uency RR Fluency Graph '98-'99	1-33	68.2 w/m, RA 9.5 y
'98	1-16	72.7 w/m, RA 9.8 y
'99	17-32	64.1 w/m, RA 9.1 y
% Acc. Strategy RR Uncorrected	1-33	87.8 %
	1-16	88.1%
	17-33	87.2 %
% Acc. Strategy RR Self-Corrected	1-33	91.9%
	1-16	91.5 %
	17-33	92.8 %

Note: % Acc. = % Accuracy; uncorrected = % accuracy when all stumbles and miscues are counted before self-correction; Self-Corrected = % accuracy after self-correction; RR = running record; w/m = words per minute; y = age equivalent years; RA = reading age equivalent.

The regression line for these 1999 scores showed an overall increase of nearly 4%. However, the mean percentage accuracies for the first two terms and the second two terms differ by less than 1% (see Table 7.1). Therefore, although it appears that Susan's scores had come to lie more consistently above 95% in 1999, without more scores no overall gain can be credited to the programme.

Susan's speed of reading was very variable (see Figure 7.5 and Table 7.1). Nearly all the reading speed scores lay between 50 words/minute (7.8 age equivalent years) and 90 words /minute (11.5 age equivalent years). Susan was observed to be fluent when she was reading words she knew. The number and the length of the pauses that resulted from Susan's attempts to decipher and self-correct unfamiliar words determined each weekly reading speed. The variability in her reading speeds was therefore a consequence of the number of miscues in a passage and the length of time Susan spent on each miscue.

To summarise, unlike her Neale and Burt standardised assessment scores, Susan's percentage accuracy scores did not show any overall progress as a result of the programme. Her reading speeds were very variable. This variability was the result of difficulties with recognition of individual, unfamiliar words rather than a more generalised lack of automaticity to read most words. Susan could speed along on words she was familiar with.

Examples of Miscues

Scanning through the week by week miscues showed that at the beginning of the programme Susan usually miscued with a real word. This real word would have the same initial letter and appear similar to the text word. (decided/discovered, released/realised). In the second two terms of the programme are examples of miscues where Susan has attempted to sound through the word (ed-u-chonal/educational, a-dor-u-tion/adoration). However, most of her miscues continued to be real words with the same initial letter as, and a similar appearance to the text word.

Several groups of miscues were examined. These groups included miscues of pronouns, tense, contractions of two words and the similar word group of/from/for/form.

- Susan's pronoun miscues are listed in Appendix P, Table P1. Several of the miscues resulted from prediction where the pronoun miscue had been predicted from a pronoun used previously in the text (see Appendix P, Table P1a: 1a, 1d, 1e, 13b, 13c, 23a). However, in a few examples, the word was predicted from the preceding sentence (see Appendix P, Table P1a: 1f, 1g).

- Susan frequently miscued the tense of the verb especially when she read text that was written in the present tense (see Appendix P, Table P2: 4 and 15). Text that Susan read was more frequently written in past tense and Susan will have been more familiar with this form. It appeared, therefore, that this type of miscue resulted from familiarity with past tense constructions and her expectation that the text would be written in past tense. In other examples, she replaced the past tense with the present tense (see Appendix P, Table P2: 7, 31). No reason was apparent for these miscues. Other miscues involved a lack of knowledge of syntax. In one example, Susan gave the noun instead of the verb (see Appendix P, Table P2a: 3b) and in a second example she gave the past tense of the verb instead of the participle (see Appendix P, Table P2a: 13d).

- Miscues involving the contraction of two words were frequent. In many examples, Susan omitted the contracted second word (see Appendix P, Table P3: 1, 3,) but sometimes she gave contracted form for the two words (see Appendix P, Table P3: 13). She did not decipher the apostrophe for the miscue well/we'll (see Appendix P, Table P3: 3). In other examples, she did not accurately

discriminate the letter groups (they're/they've, these/there's). Then she gave a miscue of similar appearance to the text words, which changed the text meaning.

Many of the two word contraction miscues were predicted from the previous text. Susan was likely to have self-corrected them because they would not have made sense with the following text. (see Appendix P, Table P3a: 3a, 3b, 3d, 15a, 15b, 15c)

There were only three examples of miscues for the similar word group of/for/from/form (see Appendix P, Table P4a). These appear to have resulted from inaccurate letter discrimination.

In this fluency running record series when reading under pressure from the clock, Susan miscued because she used incomplete and/or inaccurate letter information. Her miscues were frequently similar looking words to the text word and began with the same initial letter. Many were predicted from the meaning of the preceding text. She was using the reading strategies recommended by the Department of Education (1985, p25). Only the occasional miscue, resulting from her poor use of syntax differed from this pattern. She frequently self-corrected, apparently when she perceived that her chosen word did not make sense with the following text (see Appendix P, Tables P1a, P2a and P3a). In the second half of the programme Susan began to use the sounding strategy and occasionally miscued because she had incorrectly sounded the word.

Weekly Strategy Running Record Assessments

Unfortunately, because of Susan's repeated absences, this running record series has only six scores during the third and fourth terms of the programme (see Figures 7.6 and 7.7). During this assessment series, Susan was questioned about the strategies she used to decipher unfamiliar words. Because of this weekly questioning, she would have been aware of the focus of this assessment series.

Susan's uncorrected percentage accuracy scores were very variable until after the Christmas holidays (see Figure 7.6). The mean score for the entire programme was 88% (see Table 7.1) and a range of 8% lying between 84% and 92% included nearly all the scores. The last four scores had a range of only 2% but at 86% to 88% this lay on the lower end of the programme range. The regression line shows a slight decrease in scores as the programme progressed. When this decrease is considered in comparison to the week to week variation, it can be seen to be of no significance, as the regression coefficient confirms.

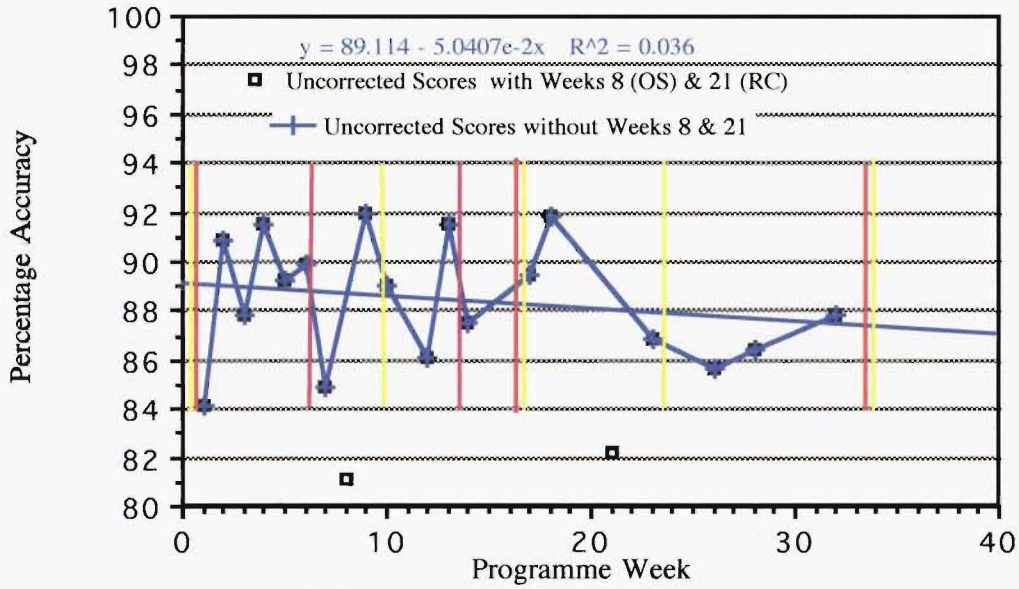

Figure 7.6. Susan's uncorrected weekly percentage accuracy scores for the strategy running record series. See Appendix G for OS and RC.

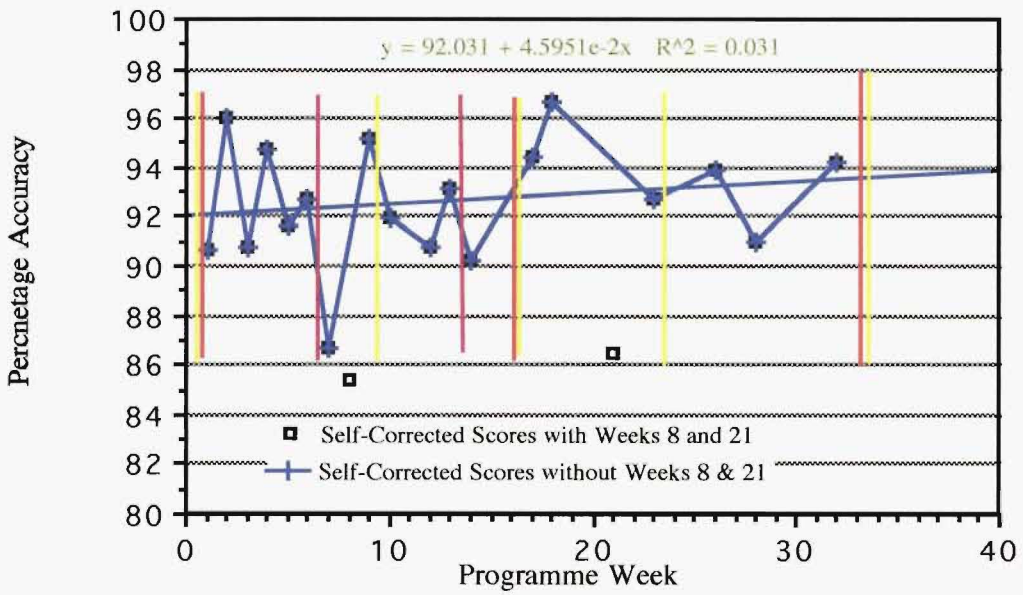

Figure 7.7. Susan's weekly self-corrected percentage accuracy scores for the strategy running record series.

Self-correction lifted the mean percentage accuracy score to 92% (see Table 7.1), an increase of 4% and the range (that included most of the scores) to 90% - 96% (see Figure 7.7). Some individual scores were lifted as much as 6%, 7% and 8%. Self-correction lifted the scores from Clay's (1985) hard text level to her instructional text level. This high level of self-correction indicates that Susan was working very hard at word recognition to read these texts. Her efforts were hampered by a lack of accuracy and automaticity in recognising the letter groups within words.

The regression line for the self corrected scores shows a slight increase of 2%. As with the uncorrected scores this decrease is very much less than the week-to-week variance between many of the scores and, as the regression coefficient confirms, is therefore insignificant.

The records for weeks 8 and 21 were not included in the regression line because the uncorrected scores lie far beneath the other scores. Susan struggled to read the week eight journal article *Oil Spill* (graded at an 11-13 year level). She showed no prior knowledge of the vocabulary (for words such as: maritime, authority, shoal, crude, refinery) or content of the text. Neither did she have the word attack skills to decipher the unfamiliar words. Without the support of being able to predict the words from the meaning in the text she was unable to read text at this 11-13 year level.

There were several multisyllabic words in the week 21 journal text that Susan unsuccessfully attempted to sound. (sit-sit-a-ted/situated, sporliering.sproling/sprawling, va-ver-and-ash/verandah) The number of these in this passage probably accounted for Susan's depressed uncorrected reading accuracy score.

Susan read text graded at the 10 – 12 year level for the fluency running record series and text graded at the 11-13 year level for the strategy running record series. The change in level from 10-12 year text to 11-13 year text (see Table 7.1) depressed the mean score by 2%. More importantly, in the fluency series many of the scores were in Clay's easy text level of 95% or greater, and therefore theoretically Susan could read them without frustration. Few of the scores in the strategy series were at this level.

It should be remembered however that Susan's reading accuracy scores have a very high self-correction component. She was working extremely hard at her word recognition to achieve these scores. They do not result from automatic fluent word recognition with the occasional miscue of the normally developing reader. Clay's (1985) categories are unlikely to have the same significance for comprehension and frustration levels that they hold for a normally developing reader.

To summarise Susan's percentage reading accuracy did not show any overall improvement in either of the two running record series. Her accuracy scores were very variable and she had a very high self-correction rate. This and the number of miscues that were of similar appearance to the text word suggest that her recognition of letter groups within words lacked accuracy and automaticity.

Strategy Use for Word Recognition

The strategy categories that have been previously described were used to analyse Susan's strategy use. The mean number of miscues in each category is presented as a percentage in Table 7.2, The means and range are also presented as raw data so that the small sample sizes can be appreciated.

Relative Proportions of Each Strategy

Susan usually used either the sounding strategy or the initial–letter strategy for unfamiliar words (see Table 7.2). She occasionally miscued with a word with a different initial-letter but of similar appearance to the text word (similar word strategy) or with meaning (meaning strategy) in the context.

Table 7.2. The strategies Susan used for deciphering her miscues.

	∑ Str. Misc.	Sounding	Initial Letter	Meaning	Similar Word	Inventing	Long-Look
Mean 98-99	25	11	10	2	1	0.4	.03
Range	11-49	6-26	3-26	0-6	0-4	0-2	0-3
Mean % 98-99		45	38	9.0	4		
Mean %1998		41	41	9	5		
Mean %1999		57	31	9	3		

Note: The values in this table supplement the data chronicled in Figures 7.8 – 8.11. ∑ = sum. Str. = strategies, Misc. = miscues

The programme changed Susan's relative strategy use (see Table 7.2). In 1998 Susan's use of the sounding strategy usually lay between 25%-60% with a mean value of 41% (see Figure 7.8). The regression line shows a downturn in her sounding strategy use through these first two terms. The regression coefficient suggests that this downturn had a moderate systematic relationship with the

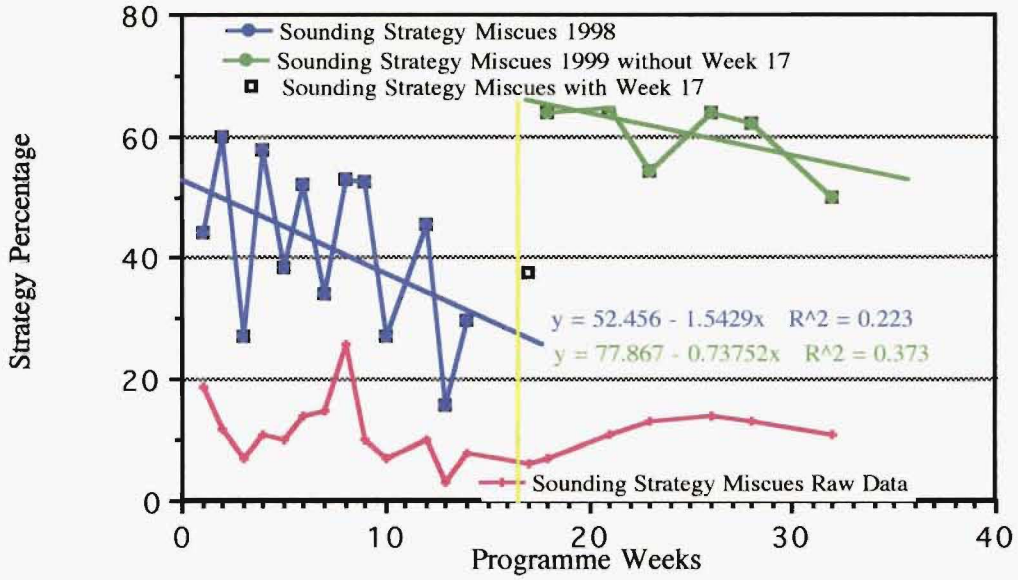

Figure 7.8. Susan's weekly percentage use of the sounding strategy in the strategy running record series.

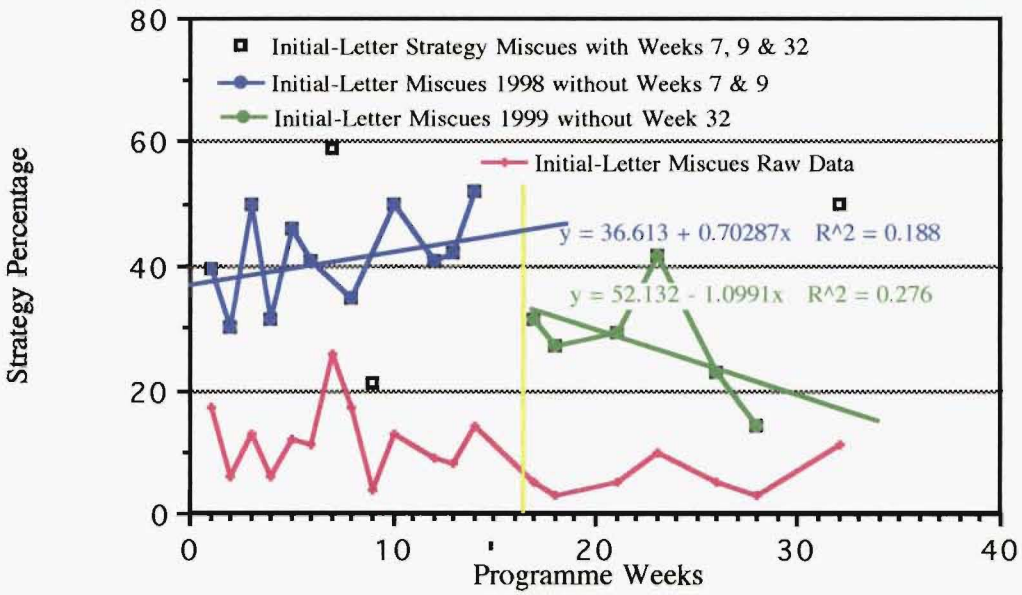

Figure 7.9. Susan's weekly percentage use of the initial-letter strategy in the strategy running record series.

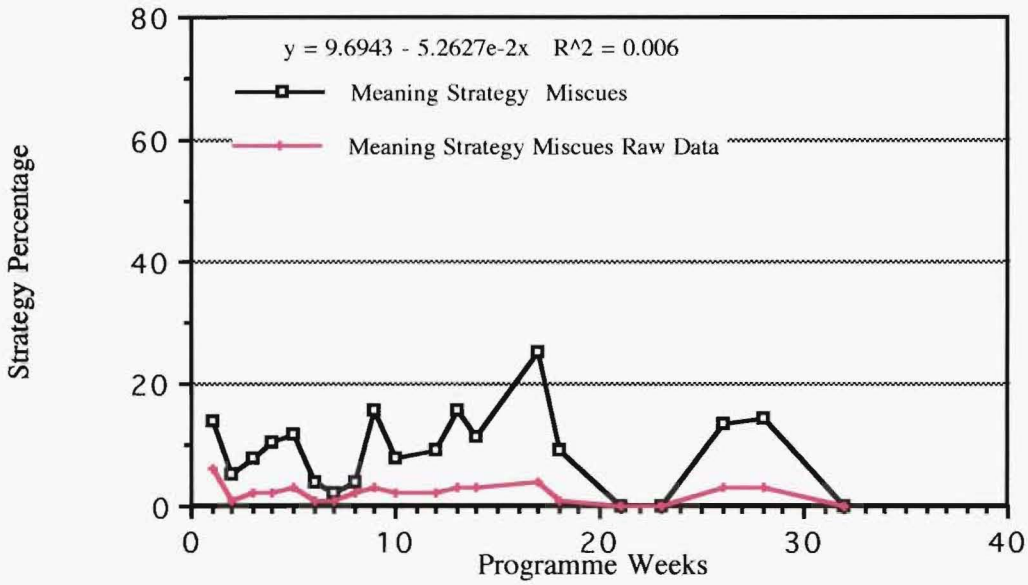

Figure 7.10. Susan's weekly percentage use of the meaning strategy in the strategy running record series.

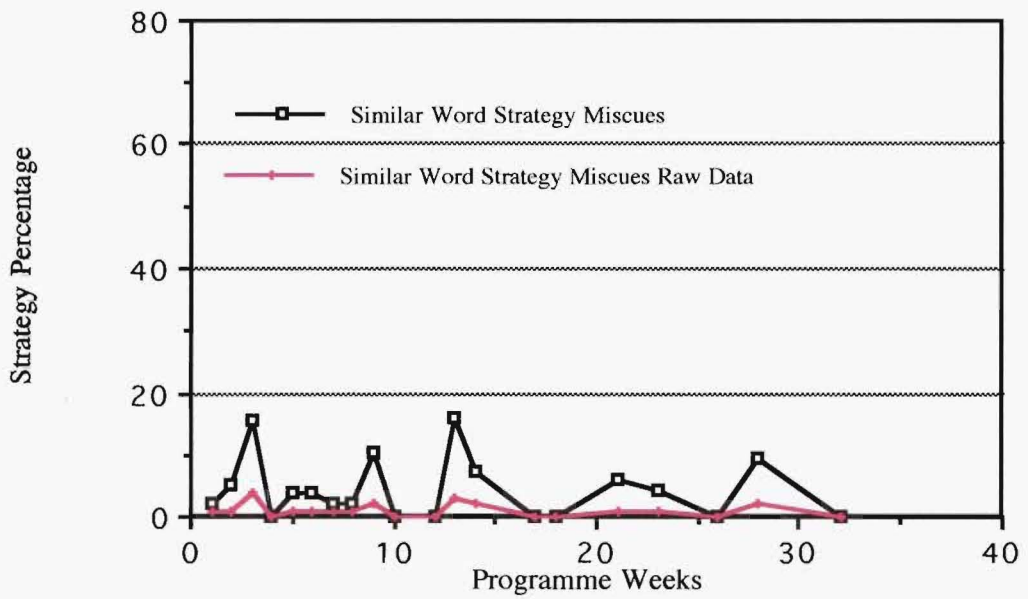

Figure 7.11. Susan's weekly percentage use of the similar word strategy in the strategy running record series.

programme. In 1999 after the initial measurement the range for Susan's sounding strategy use lifted to between 50% and 70% (see Figure 7.8) with a mean value of 57% (see Table 7.2).

In contrast although the range of Susan's initial-letter strategy use did not vary greatly between 1998 and 1999 the mean dropped 10% from 41% in 1998 to 31% in 1999 (see Table 7.2 and Figure 7.9). That is in 1998 Susan's mean use for the sounding and initial-letter strategies was the same. In 1999 her use of the sounding strategy was 25% higher than, and nearly double, her use of the initial-letter strategy.

Susan's use of the meaning strategy fluctuated between 0%-20% during the programme (see Figure 7.10). Her mean use did not alter between 1998 and 1999. Her use of the similar word strategy usually fluctuated between 0%-10% but sometimes rose to between 10%-20% (see Figure 7.11). In 1999 her percentage mean use was half that of her 1998 use.

To summarise, the programme changed Susan's reading behaviours. After an initial downturn in use in 1998 she increased her use of the sounding strategy. She reduced her use of the initial-letter strategy so that during 1999 she was using the sounding strategy nearly twice as often as the initial-letter strategy.

Self-Correction Behaviours for Each Strategy

Self-correction was very variable for the sounding, initial-letter, meaning and similar word strategies (see Figures 7.12 – 7.15). The variability in the self-correction rates was evident both between the texts read and between the weekly readings within one text. Very low sample sizes of less than five words will have inflated the percentage differences between the scores for the meaning and similar word strategies particularly, thereby increasing the apparent variability (see Figures 7.14 and 7.15).

Susan self-corrected more frequently when she used the sounding strategy than when she used the initial-letter strategy (see Table 7.3). The range for most of the self-correction rates for the sounding strategy lay between 20%-60% and for the initial-letter strategy between 0%-40%. The mean self-correction rate for the sounding strategy approached double that for the initial-letter strategy.

The regression lines for the sounding, initial-letter, meaning and similar words strategies all indicate an increase in self correction behaviour during the year of the programme. But the week-to-week variation in the percentage of the miscues that were self-corrected was large in comparison to the overall increase during the year. The regression coefficient therefore suggests that the programme

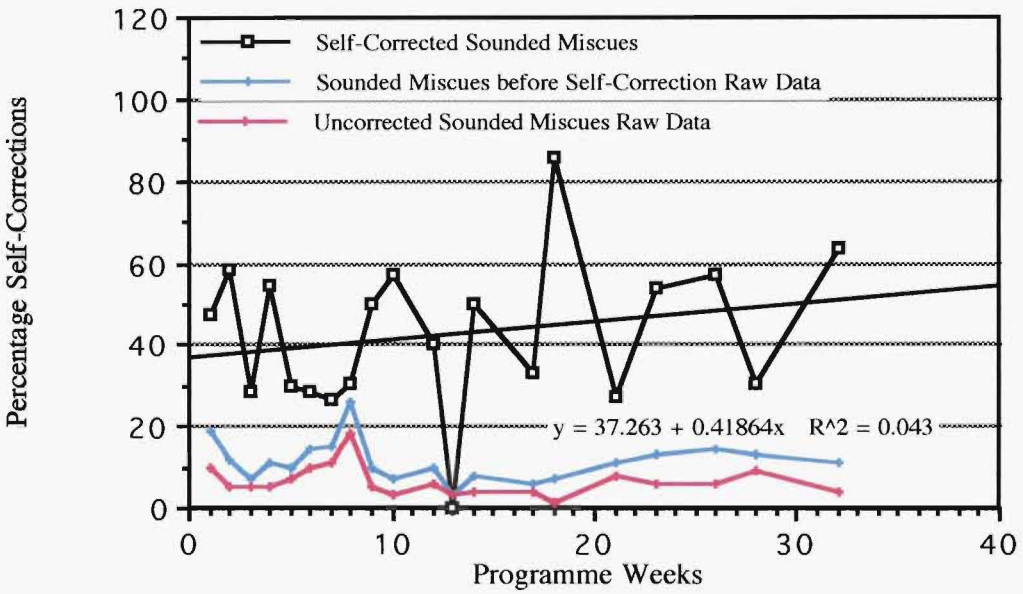

Figure 7.12. The percentage of sounding strategy miscues that Susan self-corrected for the strategy running record series.

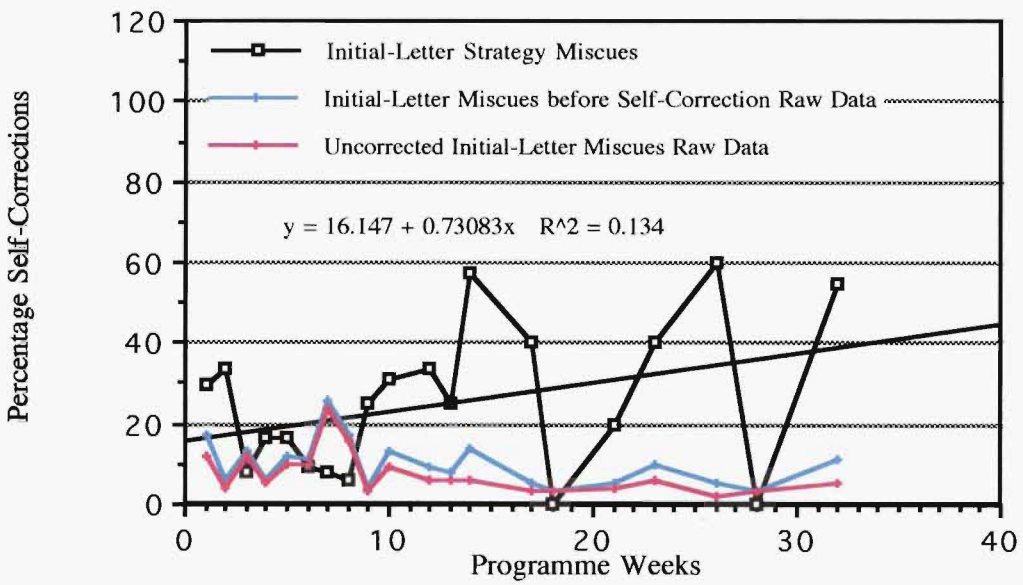

Figure 7.13. The percentage of initial-letter strategy miscues that Susan self-corrected for the strategy running record series.

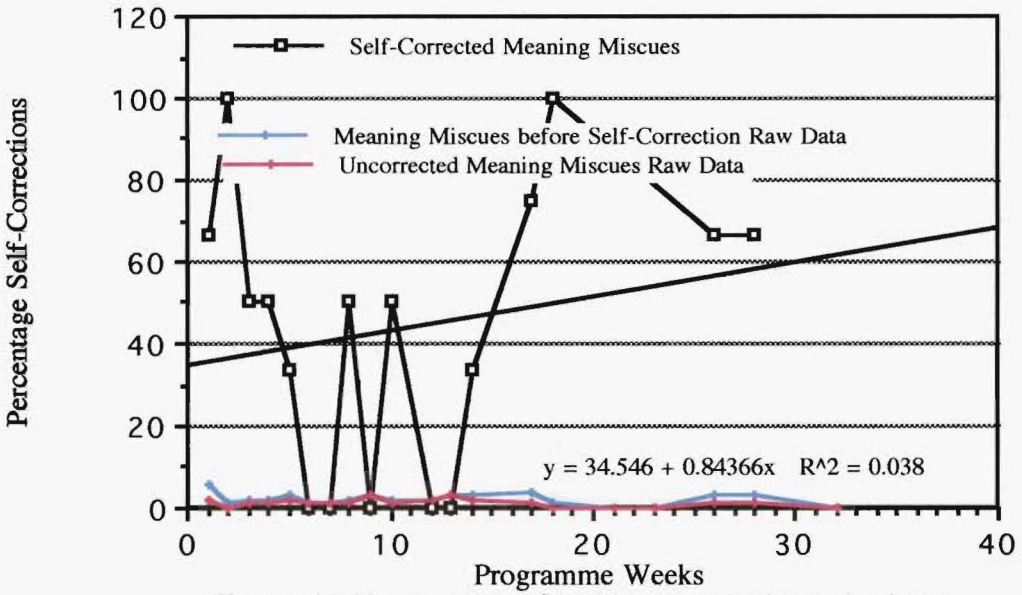

Figure 7.14. The percentage of meaning strategy miscues that Susan self-corrected for the strategy running record series.

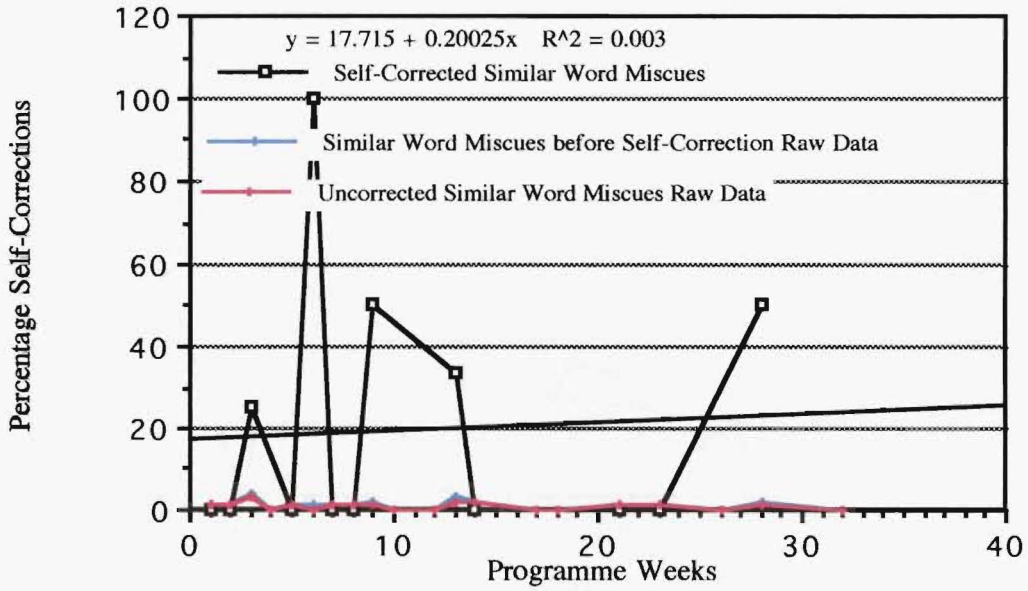

Figure 7.15. The percentage of similar word strategy miscues that Susan self-corrected for the strategy running record series.

accounted for an insignificant proportion of the variance for the sounding, meaning and similar words strategies and a relatively insignificant proportion of the variance for the initial-letter strategy.

Table 7.3. The proportion of miscues Susan self-corrected for each strategy.

	% Sounding sc	% Initial-Letter sc	% Meaning sc
Mean	43	26	44
Range	0-86	0-60	0-100

Note: sc = miscue self-corrected, Sounding = sounding strategy; Initial-Letter = initial-letter strategy; Meaning = meaning strategy.

Characteristics of Sounding and Initial-Letter Strategies

When Susan used the initial-letter strategy, nearly all her miscues were real words and nearly three-quarters looked similar to the text word and had meaning in the sentence (see Table 7.4). The fact that a high number of Susan's miscues in this running record had a similar appearance to the text word suggested that she was reading with incomplete and inaccurate letter information. These results from this series of running records reinforce the results for the fluency running record series. Her ability to decipher letter information in words was not yet accurate and automatic.

Table 7.4. Characteristics of Susan's sounded and initial-letter strategy miscues.

	% Real Words	% Similar Words	% Meaning Words
	Sounded Miscues		
Mean	31	21	14
Range	0 - 67	0 - 67	0 - 33
	Initial-Letter Miscues		
Mean	98	72	71
Range	83 – 100	46 – 100	25 - 100

Note: Meaning Words are words that gave an acceptable meaning within their sentences. This was not necessarily the author's meaning nor did the meaning necessarily fit with the rest of the passage.

When Susan used the sounding strategy only one third of her miscues were real words. Two thirds of these real words had a similar appearance to the text word and half had meaning in their sentence (see Table 7.8). These results suggest that when Susan was attempting to sound through a word she

was inaccurate in deciphering the letter information. In addition, she was not good at integrating the meaning cue to find a word that fitted both the letter groups and the meaning.

Comparing the characteristics of the sounding strategy and the initial-letter strategy, it can be seen that Susan's initial-letter strategy miscue was:

- twice as likely to be a real word;
- twice as likely to be a word that had a similar appearance to the real word; and
- more than twice as likely to be a word with meaning in the sentence.

Susan's only method for recognising miscues was to detect inconsistencies in meaning and syntax. But when she used the initial-letter strategy, these were the cues she had used to read unfamiliar words initially. Many of Susan's initial-letter miscues were cued from inaccurate letter information, meaning and syntax. They were real words, had a similar appearance to the text word and had meaning in the sentence. Susan was unlikely to perceive that these were miscues.

Susan's reading had always been characterised by a very high miscue rate and consequent loss of meaning. She would have had no experience of receiving very clear meaning as she read and would therefore have no expectation of such clarity. As a consequence, she would have been less likely than a competent reader to perceive inconsistencies in the meaning of the text and therefore to perceive that she had miscued. She is likely to have thought that her initial-letter strategy was a very successful strategy.

For the sounding strategy, on the other hand, only one third of her miscues were real words and only a half of these made sense in their sentence. She would often have been aware that she had miscued. She was likely to have thought that this strategy was less successful than her initial-letter strategy. This conclusion is supported by the fact that she self-corrected nearly twice as often when she used the sounding strategy as she did when she used the initial-letter strategy (see Table 7.4).

Strategy Use and Word Length

Samples for the number of syllables in words, and particularly samples for each strategy type within these word length samples were often very small, for example, five or less words. There is therefore, likely to be a distortion of the percentages for these results, as has already been discussed, that would lead to an inflation of the differences between groups. This is particularly true of Susan's 1999 three-syllable word and four or five syllable word samples. Susan did not change her strategy use during the programme for these longer words.

Table 7.2 presents data that shows that Susan usually used either the sounding strategy or the initial-letter strategy. Table 7.5 presents information to show that the number of syllables in a word influenced Susan's strategy use.

Table 7.5. The relationship between Susan's choice of strategy and the number of syllables in the miscue.

	1 syllable	2 syllables	3 syllables	(4+5) syllables
	Sounded miscues			
Mean %	20	58	75	77
Mean % ' 98		49		
Mean % '99		73		
Range	0-60	22-100	40-100	0-100
	Initial-Letter miscues			
Mean 98-99 %	49	36	22	19
Mean % '98		44		
Mean% '99		22		
Range	20-78	0-63	0-60	0-100
	Meaning Miscues			
Mean %	21	3		
Range	0-50	0-11		
	Similar Word Miscues			
Mean %	8			
Range	0-29			

For one syllable words, Susan used the initial-letter, the sounding and the meaning strategies but she used the initial-letter strategy twice as often as she used either of the other two strategies. Her use of the initial-letter strategy was very variable throughout the year with no overall change associated with the programme (see Figure 7.20).

The regression line shows that Susan decreased her use of the sounding strategy for one-syllable words during 1998 (see Figure 7.16). The programme had a relatively low to moderate systematic effect on this decrease. She increased her use at the beginning of 1999 only to slowly decrease it again as the last two terms of the programme progressed.

Susan used the meaning strategy as frequently as she did the sounding strategy for one syllable words and very occasionally for two syllable words (see Table 7.5 and Figures 7.24 and 7.25). The similar-word strategy was used occasionally for one-syllable words (see Table 7.5 and Figure 7.26). Her use

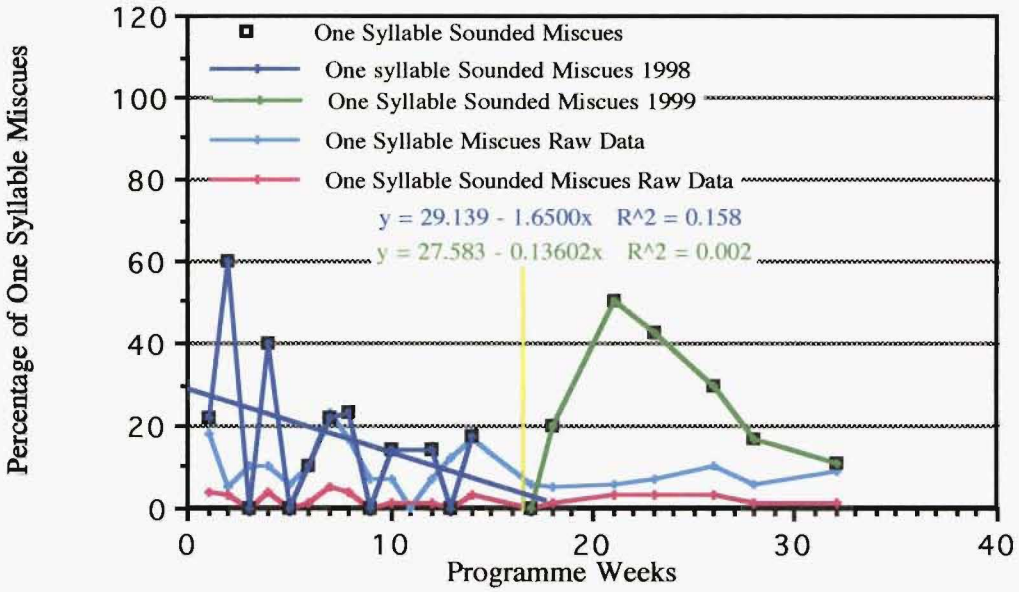

Figure 7.16. The percentage of one syllable miscues for which Susan used the sounding strategy.

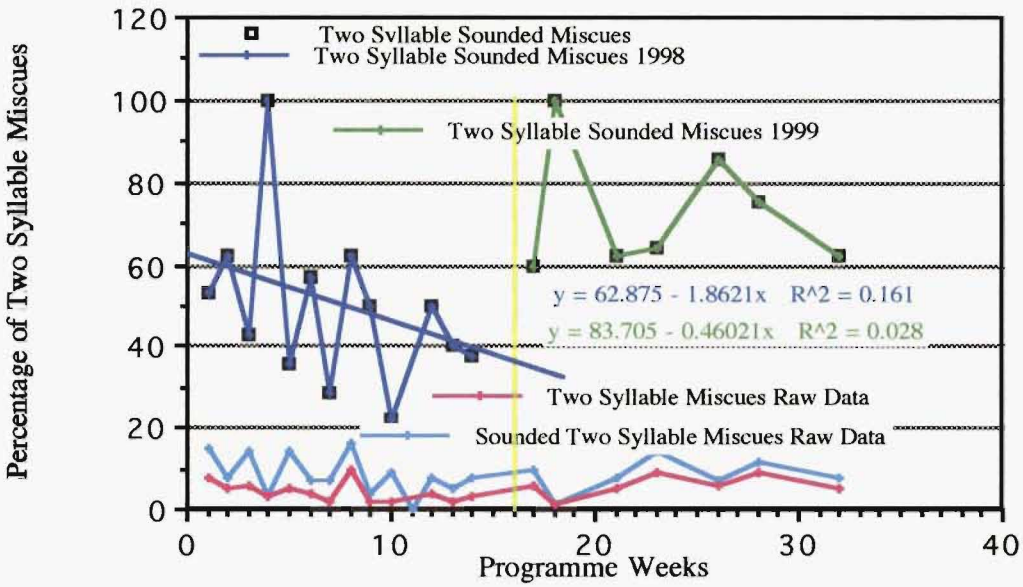

Figure 7.17. The percentage of two syllable miscues for which Susan used the sounding strategy.

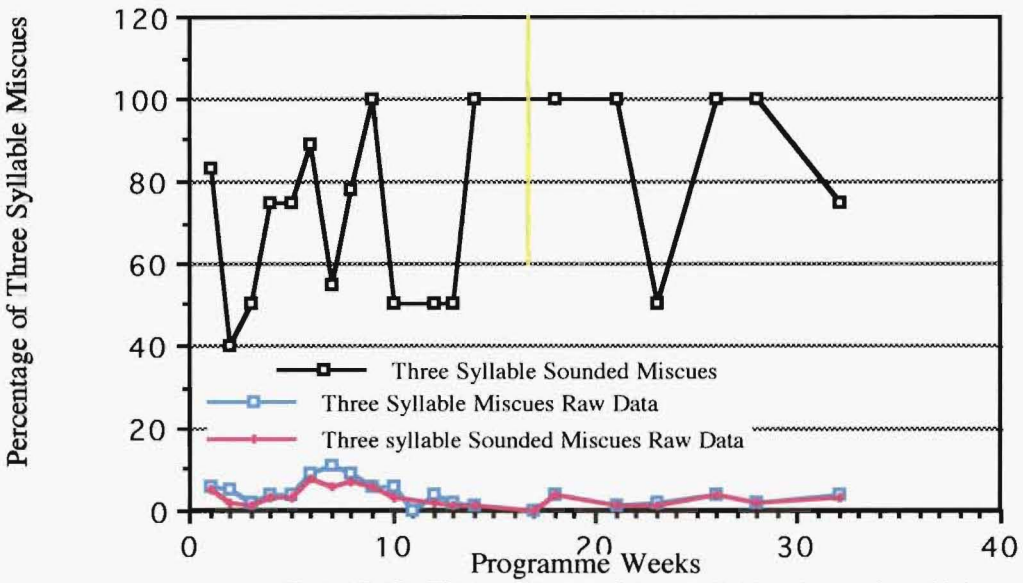

Figure 7.18. The percentage of three syllable miscues for which Susan used the sounding strategy.

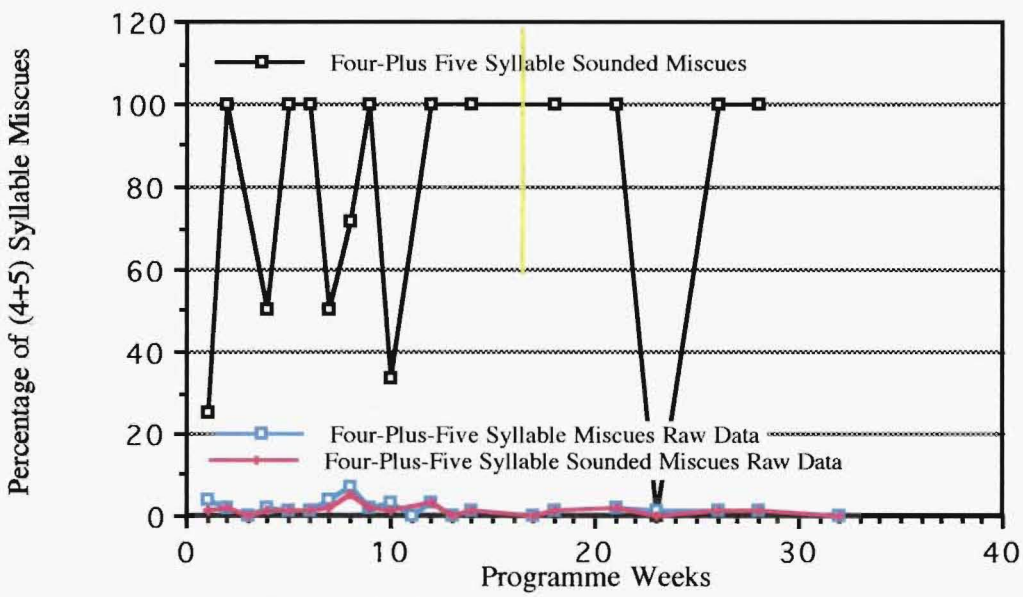

Figure 7.19. The percentage of four-plus-five syllable miscues for which Susan used the sounding strategy.

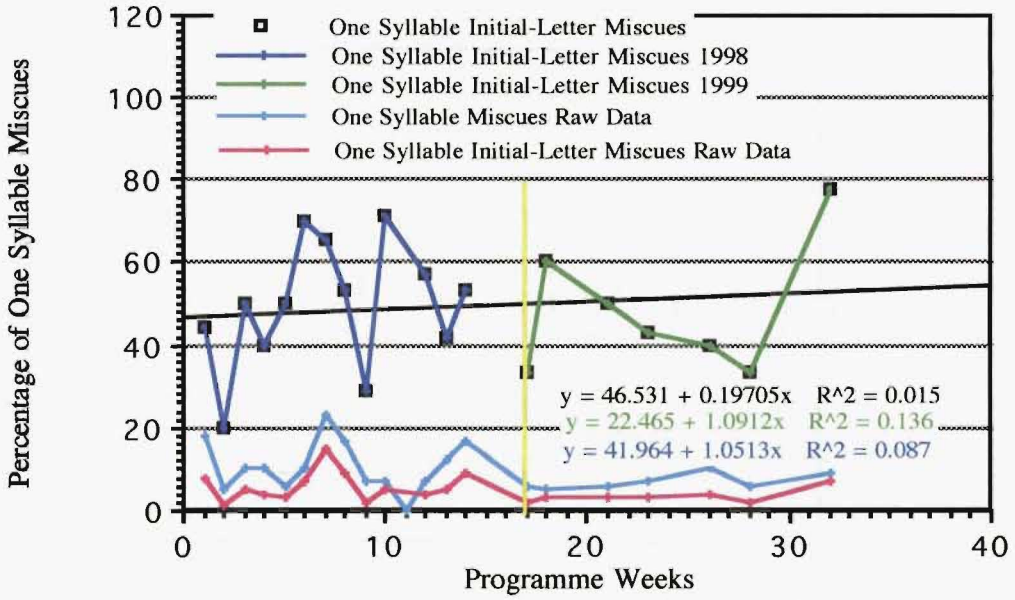

Figure 7.20. The percentage of one syllable miscues for which Susan used the initial-letter strategy.

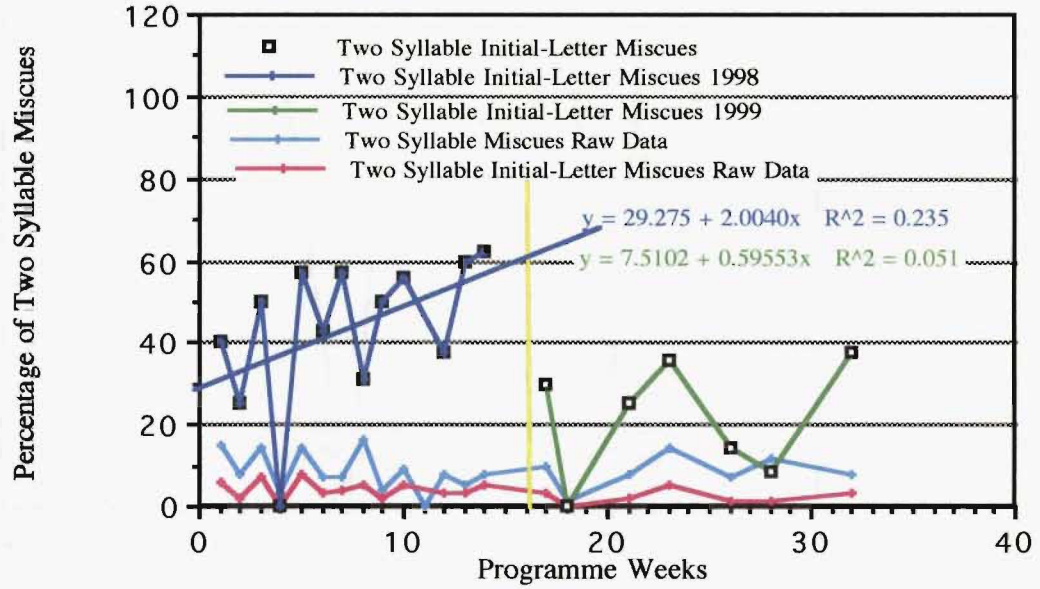

Figure 7.21. The percentage of two syllable miscues for which Susan used the initial-letter strategy.

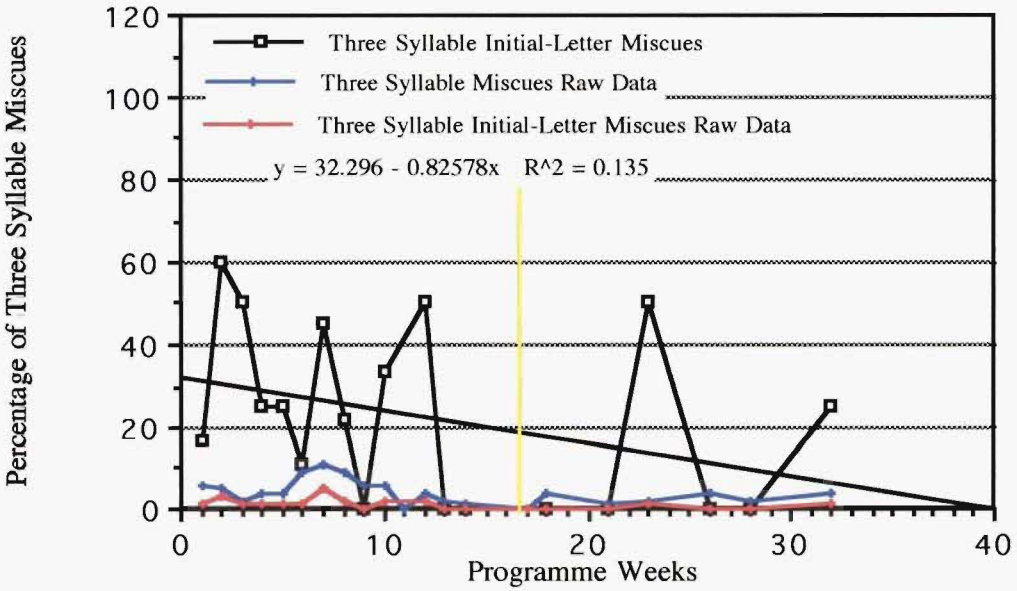

Figure 7.22. The percentage of three syllable miscues for which Susan used the initial-letter strategy.

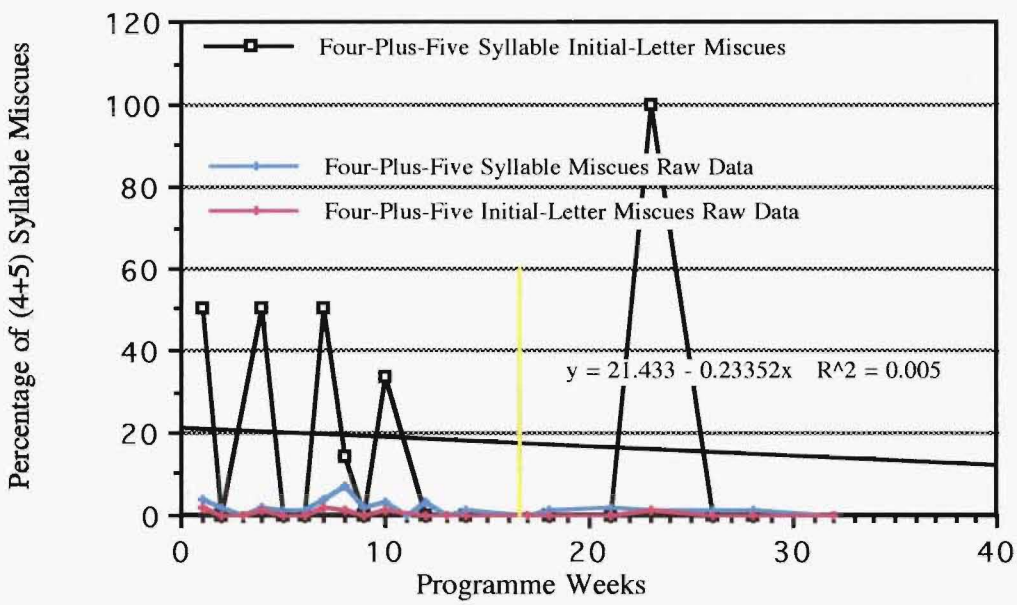

Figure 7.23. The percentage of four-plus-five syllable miscues for which Susan used the initial-letter strategy.

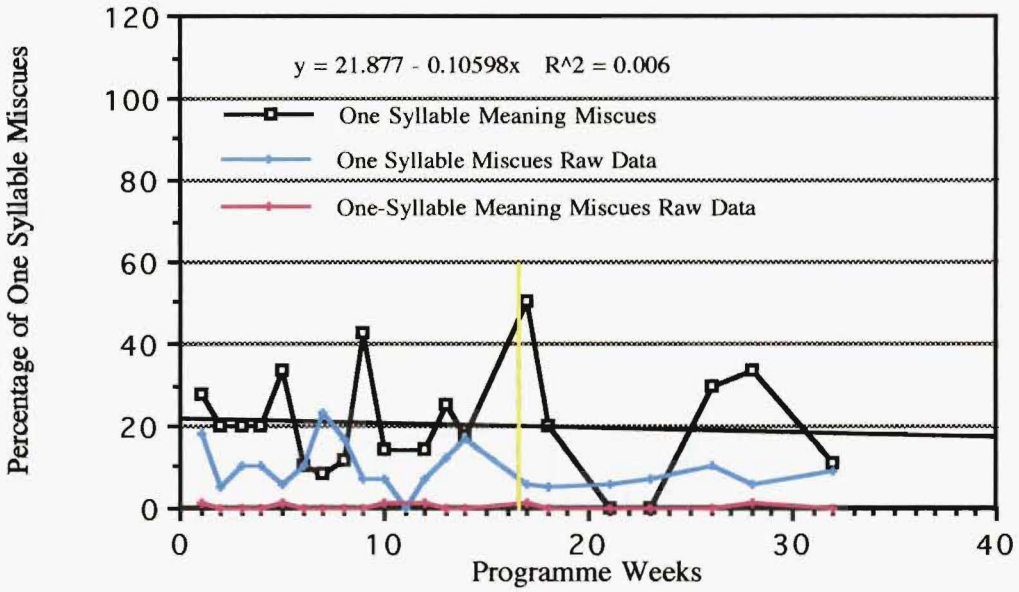

Figure 7.24. The percentage of one syllable miscues for which Susan used the meaning strategy.

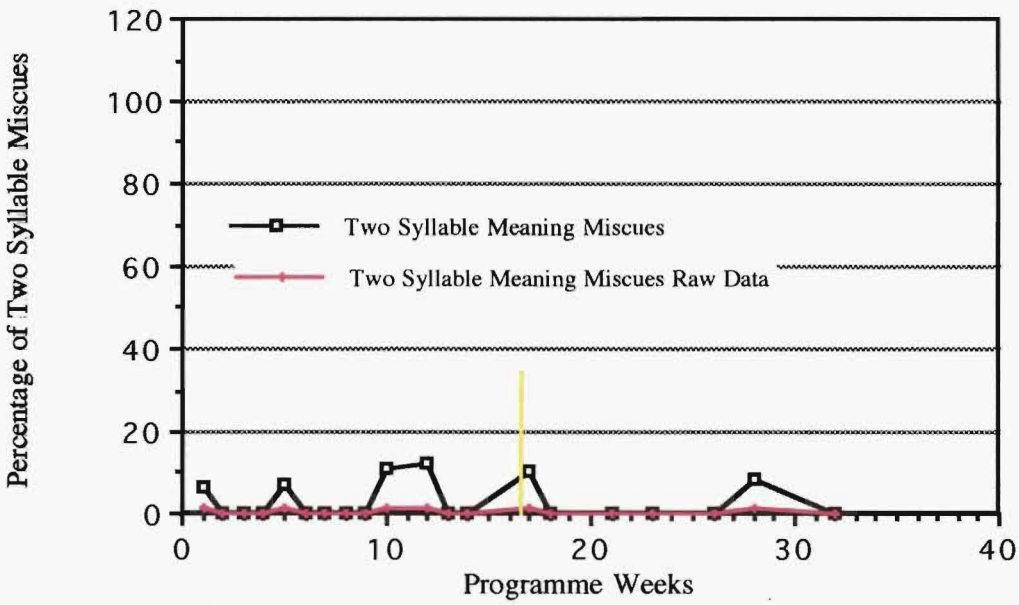

Figure 7.25. The percentage of two syllable miscues for which Susan used the meaning strategy.

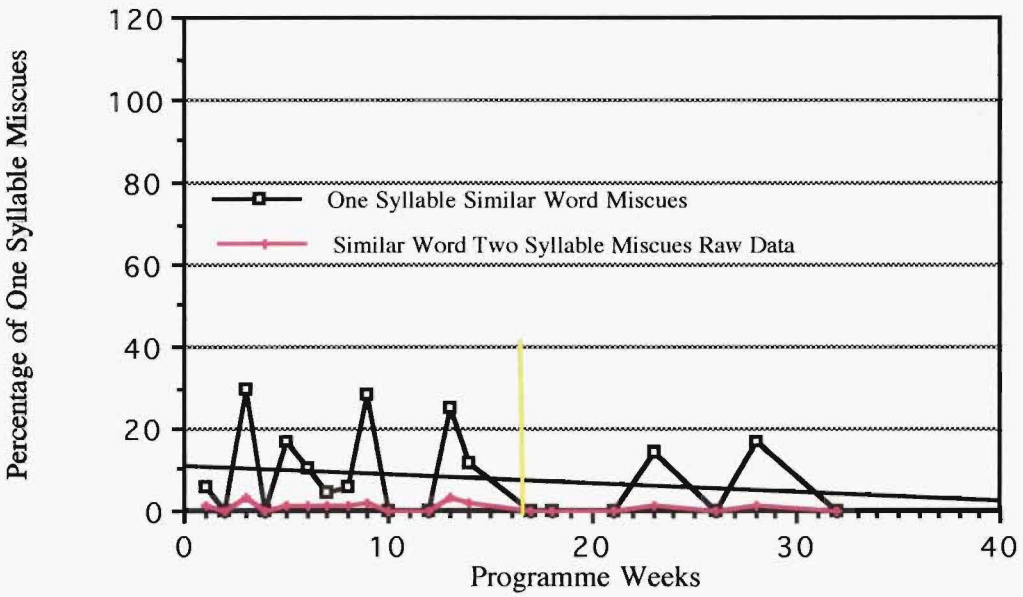

Figure 7.26. The percentage of one syllable miscues for which Susan used the similar word strategy.

of the meaning strategy and the similar word strategy to decipher one-syllable words did not show any systematic change with the programme.

The regression line shows that Susan had decreased her use of the sounding strategy for two syllable words during 1998 (see Figure 7.17) and that the programme had a moderate systematic effect on this decrease. During 1998 her mean percentage use was 49% (see Table 7.5) and most of her percentage use values lay between 20%-65% (see Figure 7.17). In 1999, she used the sounding strategy more frequently. Her mean percentage use increased to 73 % and her percentage use values lay between 60%-100%.

The converse pattern was true for Susan's use of the initial-letter strategy with two syllable words (see Table 7.5 and Figure 7.21). During 1998, Susan made increasing use of the initial-letter strategy. The regression coefficient indicated that the programme had had a moderate systematic influence on this increase. During 1998, Susan's mean percentage use was 44% and most of her percentage use values lay between 20-65%. During 1999, her mean percentage use halved to 22% and her percentage use values dropped to 0%-40%.

To summarise, the programme changed Susan's strategy use for two syllable words only. During the first two terms of the programme, she decreased her use of the sounding strategy and increased her use of the initial-letter strategy. After the Christmas vacation, during the third and fourth terms of the programme, she increased her use of the sounding strategy by more than 30% and halved her use of the initial-letter strategy.

The Initial-Letter Strategy

Examples of one, two and three syllable initial-letter miscues are listed in Appendix Q, Tables Q1, Q2, and Q3 respectively. Selected examples from these Tables are given in their sentence context in Appendix Q, Tables Q1a, Q2a and Q3a.

The initial-letter miscues can be seen to be real words that usually have a similar appearance to the text word. When these miscues are viewed as a complete sample, it seems likely that even words that do not have a similar appearance for a proficient reader are likely to have appeared similar to Susan.

An examination of the one-syllable initial-letter miscues in context shows that they were usually predicted from the preceding context (see Appendix Q, Table Q1a: 10a, 10b, 10c, 14a, 14c, 23a,). Looking at the self-corrected miscues in context, it appears that if Susan realised that the miscued

word did not make sense with the following portion of the sentence, she often self-corrected (see Appendix Q, Table Q1a: 10d, 14b, 14f, 23a).

The examples for the two and three syllable initial-letter miscues show that Susan was more likely to miscue with a word of similar appearance to the text word but with no meaning in the sentence (see Appendix Q, Table Q2a: 10b, 23b; and Table Q3a 10b, 12b). She did monitor for meaning and self-correct some of the miscues that had no meaning (see Appendix Q, Table Q2a: 17b, 23a; and Table Q3a: 12a)

The characteristics of the miscues in the one, two and three syllable miscues provide confirmation of the characteristics of Susan's initial-letter strategy miscues which have been discussed previously (see Table 7.4). That is, initial-letter miscues are usually words of similar appearance to the text word, the majority of which have meaning in their sentence.

As has already been stated, Susan learned to understand the meaning of the text when she read silently in the early stages of the programme. She read with many uncorrected and self-corrected miscues. It seems likely that she did not hold the expectation that text should have very clear meaning for the reader. It also seems likely that, for Susan, nearly all of her initial-letter miscues had a similar appearance to the text word and had some meaning in the sentence, although this appearance and this meaning may not have been apparent to a proficient reader.

Summary of the Programme Induced Changes for Susan

Susan learned to read for meaning while she was reading silently during the programme. She became an enthusiastic reader and read many books in the course of the programme. She spent many voluntary hours reading stories she enjoyed (see Appendix O, Table O1).

Susan had been taught to read according to the Ministry of Education's (1985) prescribed reading syllabus of repeated sampling the text, predicting a word from meaning and minimal letter information, confirming the prediction from the meaning of the passage or self-correcting if necessary. In addition, she had developed a misconception about letter information. She had been trying to apply Maori vowel sounds to words she was unfamiliar with. Therefore, any efforts she made to use letter information were very unlikely to be successful. Susan was applying the strategies she had been taught in school but was miscuing because the letter information she used was incomplete, inaccurate and, for the short vowel sounds, inappropriate.

This programme taught phonemic awareness, letter information, blends and phonograms and the strategies to apply this knowledge to unfamiliar words. Susan's Burt and Neale scores show that she made steady progress in applying the sounding knowledge and strategies she was learning throughout the programme. By the end of the year, she had made a year's progress in a year despite her very irregular attendance throughout the two 1999 terms. Although this was not accelerated progress if it is viewed in terms of her previous progress, it represents an approximate increase of one third of her gains over the preceding nine years.

In addition, Susan changed her reading behaviours in 1999. Analysis of her strategy running records show she increased her use of the sounding strategy and decreased her use of the initial-letter strategy. Closer analysis showed that this change in strategy use occurred when she attempted to read two syllable words. She increased her overall use of the sounding strategy by nearly 25% and her use of the sounding strategy for two syllable words by more that 30%. She halved her use of the initial-letter strategy. By the end of the programme, sounding was the strategy that Susan used most frequently for words of two or more syllables. Unfortunately, because she did not change her strategy use until 1999 and because of her frequent absences during 1999, there was not time for her changed reading behaviours to effect an increase in her rate of progress for her Neale and Burt assessment scores.

Susan did not show any improvement by the end of the programme for either her fluency or strategy running record self-corrected percentage accuracy scores. For journal text, with its higher proportion of one and two syllable words and fairly rich contextual meaning Susan maintained a higher use of the initial-letter strategy. When she used this, she used inaccurate and incomplete letter information. In 1999 when she began to use the sounding strategy for many two-syllable words, she was frequently inaccurate in applying her developing letter-sound knowledge. Her high number of absences restricted the time she had to practise applying the sounding strategy and interrupted the continuity of the teaching. There was not time for her changed reading behaviours to effect changes in her reading accuracy scores.

Susan's Strategy Use and Reading Self-Beliefs

Susan as a Strategic Reader

When she first entered the programme, Susan stated that she only paid attention to the first letter or blend in a word (see Table 7.6). She would sound this out. If she could not read the word, she left it

out and read on. She did not try to monitor her reading in order to check she had deciphered words correctly.

By the end of October, Susan stated that she did sound the words out. She now said that she worked words out by "fitting the letter groups or the sentence". She stated that she knew it was the correct word if it fitted the letter groups and made sense in the sentence. In addition, she had become more skilled at sounding the letter groups through.

By the beginning of February, she was stating the she "don't find the words difficult no more". She knew that the word was correct if it fitted the letter groups and made sense. By July 1999, the end of the programme, she said that she believed that she was more successful identifying words when she used the strategies taught in the programme. She could verbalise more of the strategies and she used the mnemonic offered in the programme to help remember them.

One term after the programme finished, Susan could still verbalise a lot of the strategies although this verbalisation was a little muddled. However, she said that she worked her way through the letter groups now and that she had not done this before she began in the programme.

However, her verbalisation of her reading strategies did not always tally with her reading behaviours. When she entered the programme, Susan did attempt to sound words in this strategy series of running records (sh/shrink/shrinks/sc, emery/immediately/sc, battl/bby/bru/brub/barrel/sc) but obviously often lacked the necessary letter-sound knowledge (st/str-ing/syringe, vent/vein/ventim/victim/x, fru/frace/fierceX). We have already seen that she most frequently used the sounding strategy to decipher words of three or more syllables (see Table 7.5 and Figures. 8.18 and 8.19), from the beginning of the programme,

The programme appears to have taught her to describe sounding strategy behaviours and given her the language to describe them. By October, she had changed her descriptions of her attempts to decipher unknown words. She now described them in the language taught in the programme. She could also describe how to monitor her attempts to decipher words in order to assess whether she had found the correct word.

However, in October and November of 1998, Susan's reading behaviours were not consistent with her statements. For one-syllable words, she used the initial-letter strategy more frequently and continued to do so throughout the programme.

Table 7.6. The cognitive strategies and metacognitive monitoring strategies that Susan stated she used for word recognition.

Date	Cognitive Strategies for Unfamiliar Word Recognition	Metacognitive Monitoring Strategies for Unfamiliar Word Recognition
24.6.98	Read on. Say the first letter. Don't get it- read on. Leave it out until get what word is. I just say the first letter like fl or whatever it is. If I don't get it I just read on and leave it out until I think I know what the word is. Sounding out I go fl or something like that if it is an f word. "What about rest of the word?" Nothing really. If it's not the right word I just leave it. If it doesn't make sense.	Don't get it- read on. Can't work out word- read on, Sounding out. fl first letters only. Read on. Just leave it Doesn't think about whether the word is right or wrong.
24.9.98	*Surgery*: scraggerly, scrag-ger-ly *Cyberleg*: Cy-ber-leg *functional*: :fully fun-fun – fantastically *composition:* com-per ti-tion	
12.10.98	*Invasion:* in-ver in-va	
29.10.98	Function: fun-c- tion. Sound words out. Can't work it out read on. Go to end of sentence and go back. Try to work word out fitting letter groups or sentence. Miss it out. Read on and keep reading then go back and try again	Does it fit right letter groups and make sense in sentence. Function/friction/sc letter groups wrong.
12.11.98	Couldn't see any reason for sounding out	
30.11.98	"In a Surly Mood" Break it up. Sounding out. Read on. Go back and see if it makes sense. Miss them out sometimes. Read it again 'spose.	Changed it. Certificate/scientific because it didn't make sense. Incorrect Doesn't sound right in the sentence. Doesn't make sense.
18.2.99	Kept going back to beginning of sentence. See if it makes sense in sentence Can't work it out: - leave it. See if word fits letter groups. "Don't find the words difficult no more."	Right if it makes sense in the sentence. Wrong if it doesn't fit the letters. Makes sense if it fits the letter groups and stuff.
13.7.99	*Subterranean*: sub-ter-ran-ean uses breaking the words into letter groups. Uses mnemonic BC WordS. Uses changing stress and vowels Just reads.	Incorrect: if word doesn't make sense go back and read again. Work through strategies again. Use them sometimes. Thinks she is more successful when she uses the strategies.
14.10.99	Changing stress and syllables. Changes letters and vowel sounds. Can't remember what words. Works way through letters in a word and then goes back to the beginning of the sentence. *fascinated*:- Breaking the letters up. Doesn't really use vowel sounds. Didn't use the letter groups before the programme.	Makes sense in the sentence.

Note: The examples of unfamiliar words in this table were words from Neale texts. The levels for the corresponding dates are given in Table 7.8.

For two syllable words, as has been discussed earlier, Susan decreased her overall use of the sounding strategy in 1998 (see Figure 7.8). Not until 1999 did Susan increase her use of sounding

For two syllable words, as has been discussed earlier, Susan decreased her overall use of the sounding strategy in 1998 (see Figure 7.8). Not until 1999 did Susan increase her use of sounding and decrease her use of the initial-letter strategy (see Figures 7.8, 7.9, 7.17 and 7.21). That is, it was not until 1999 that Susan started to use the sounding strategy more consistently for two syllable words.

It seems likely that Susan was not always conscious of her processing when she used the initial-letter strategy. We have seen that these miscues looked similar to the text word and were often predicted from the meaning in the preceding sentence. We have also seen that Susan self-corrected less for these initial-letter miscues. It seems that she may have thought that she was matching letter information accurately for the one and two syllable words that she had used the initial-letter strategy to decipher. She may also have been answering the questions about her strategies in terms of the teaching in the programme in order to please.

At the beginning of the programme, Susan verbalised and applied the reading strategies that she had been taught in her previous school reading programmes. Although she did not verbalise sounding through words when she first entered the programme, she did attempt to do this, particularly for words of three or more syllables. Her efforts were hampered by her lack of knowledge and inappropriate knowledge about letter information and about the strategies to apply such knowledge.

Susan's Causal Attribution Beliefs

At the beginning of the programme, Susan believed she was average at oral reading and below average in silent reading, comprehension and speed of reading (see Table 7.7). Her beliefs about her reading ability, with the exception of oral reading, were slightly optimistic. Her very optimistic rating of her oral reading as average was based on the fact that she comprehended what she read as she read it aloud but not when she read silently. She probably also rated her oral reading against the reading ability of her special needs classmates, most of whom would have had even more pervasive learning and literacy difficulties.

By September, she had learned to comprehend text as she read silently and had become an enthusiastic reader. One day in the seventh week of the programme, she came bursting in for her lesson telling us how long she had read the night before. "From half past three maybe to about half past nine. --- Yeah the book is really cool." She began to avidly read books written by R. L. Stine.

In November, as a consequence of her reading successes with Chapter books, she ranked herself with the best readers in the school for silent reading, oral reading and comprehension. This very unrealistic view of her reading ability continued until the end of the programme. By the end of the programme she also believed that she had improved immensely, in fact, from being among the least able readers in the school at the beginning of the programme to being one of the most able.

At the beginning of the programme, Susan was realistic in her choice of an easy passage, a Level 2 Neale passage (see Table 7.8). For this difficulty level of text, she thought she usually knew the best ways to read the words, but often guessed and didn't try hard to read the words. She also thought that she could read most of a page and that it was neither very difficult nor very easy for her to read.

Table 7.7. Susan's ranking of her reading ability in comparison with the other pupils in her school year.

Date	School Year	Silent Reading	Oral reading	Comprehension	Speed of Reading
22.6.98	10	4	3	4	4
3.11.98	10	1	2	1	3
15.2.99	11	1	3	1	2
13.7.99	11`	1	2	1	2
20.10.99	11	1	2 "I hate the interruptions and then I lose it"	1	3
		Susan's rating of her last year's (year 10) reading ability from her year 11 perspective as an indication of how she thought she had improved.			
13.7.99	10	4	3 "because I understood what I read out loud but not to myself"	1	4
20.10.99	10	5	5	1	5

Note: Susan rated her ability on a 1-5 scale. On a par with the best readers in the school = 1.The questions used to obtain this self-belief data are presented in Appendix F, Question 6a.

By the end of the programme, she rated passages as easy-to-read which her percentage accuracy scores (measured on alternate Neale texts at the same level) placed in Clay's (1985) hard text category. She now stated that she tried hard to read the words, she knew the best ways to read them,

and she didn't guess (see Table 7.8). A term after the programme finished she thought that text which, for her, would have been in Clay's hard text category contained "no hard words". At the end of the programme and a term later, she believed that she could read this very difficult text, which she had rated easy-to-read, with no help (see Table 7.9). She now had the confidence to attempt text that a normally achieving reader, with her estimated percentage accuracy score would have regarded as very difficult. Her self-rating of her reading ability was over-inflated.

Even for text she rated as hard to read, she thought she knew the best ways to read it, tried hard to decipher the difficult words and didn't guess. She thought she could read the page and that this level of text difficulty was easy-to-read.

Table 7.8. Susan's percentage accuracy and causal attribution beliefs for reading the Neale Diagnostic Tutor passages that she had rated as easy or hard to read.

Date	E: H	N	% Acc	Know/Don't Know	Guess/Didn't Guess	Try/Didn't Try
						5
24.6.98	E	2	100	2	2	
13.7.99	E	5	88 Ceiling Level 5	1	5	1
14.10.99	E	4	85	1	No Hard Words	No Difficult Words
24.6.98	H	4	78 Ceiling Level 3	2	3	1
13.7.99	H	6	80	1	4	1
14.10.99	H	6	85	1	5	1

Note: Susan's beliefs about her reading knowledge and behaviours were measured on a 1-5 scale. Know = 1, Guess = 1, Tried Hard = 1. The questionnaire giving the causal belief statements is presented in Appendix D. Know = know the best ways; E = easy; H = Hard; N = Neale level for the Diagnostic Tutor passages; % Acc. = percentage accuracy that Susan attained in her reading assessment for the Neale passages for Forms One or Two at the equivalent level to those selected by Susan from the Diagnostic Tutor that were used to determine these causal attributions.

The programme had changed Susan's self-efficacy and causal attribution beliefs about her reading. She now thought that she could successfully read text which had been measured as being difficult for her. She also believed that now she tried hard to decipher words and did not guess.

Susan rated her self-efficacy and causal attributional beliefs each week after she had read the strategy running record text (see Appendix O, Table O2). It can be seen that during this section of the

programme there was a shift in her beliefs. She came to believe that she needed very little help to read the texts and that the words were usually easier to read. She also usually believed that she tried harder to work out the words and guessed less. This change in Susan's self-beliefs was the same change as was described above.

Susan entertained unrealistically high beliefs about her ability to read. She believed that she could read text categorised as difficult for her with very little help, that mostly the words were easy to read and that she no longer needed to guess words. This belief confirms earlier observations that she would have no way of recognising that she frequently miscued using the initial-letter strategy. She knew she was successfully reading Chapter books in her free time. She believed she was a successful reader. At the end of November 1998, Susan expressed the belief that she did not need to go on working at her sounding strategy. She couldn't see any reason for it. These unrealistic views may have been reflected in her decreased use of the sounding strategy and her increased use in the initial-letter strategy for two syllable words during the first two terms of the programme in 1998.

Table 7.9. Susan's estimated percentage accuracy and her self-efficacy judgements about her ability to read passages from the Neale Diagnostic Tutor

Date	E: H	N	% Acc	Can Read Page/Can't Read Page	Easy to Read/Hard to Read
24.6.98	E	2	100	2	3
13.7.99	E	5	88	1	1
20.10. 99	E	4	85	1	1
24.6.98	H	4	78 Ceiling Level 3	3	3
13.7.99	H	6	80 Ceiling Level 4	3	4
14.10.99	H	6	83 Ceiling Level5	1	2

Note: Susan's self-efficacy judgements about her reading ability were measured on a 1-5 scale. Can Read = 1, Easy to Read = 1. The questionnaire for self-efficacy is listed in Appendix D. E = easy; H = hard; N = Neale level from the Diagnostic Tutor; % Acc. = percentage accuracy that Susan attained in her reading assessment for the Neale passages for Forms One or Two at the equivalent levels to those selected by Susan from the Diagnostic Tutor that were used to determine these self-efficacy ratings.

A second important factor that was likely to have contributed to her decreased use of the sounding strategy was the difficulty she experienced in applying it. She had little and inaccurate letter sound knowledge. She stated that prior to the programme she had always unsuccessfully tried to use the Maori short vowels to read words. Because she did not have the appropriate knowledge or strategies she was often unsuccessful when she tried to sound words. As a consequence, she did not have confidence in her ability to use this strategy. (At the end of the programme, I, the teacher, suggested that the reason she had begun using the sounding strategy so late in the programme was that she found it very difficult. She grinned and nodded. I also suggested to her that she had not believed the sounding strategy would work. Again she grinned and nodded.) In addition, throughout the programme, she was very impatient when asked to try sounding as she read because she found it disrupted the story line and she lost the meaning (see Table 7.7).

At the beginning of 1999, Susan insisted that she was going to sit School Certificate English and would not accept school advice that she would find the General Studies English course more suitable. She attempted to read the first book that was to be studied. The book required good word recognition skills in order to cope with the inferential component in the comprehension. For Susan, who still relied heavily on meaning to support her word recognition, this book was a disaster. She quickly became discouraged, gave up and changed classes.

At this time, the beginning of 1999, she changed her strategy use as previously described. She increased her relative use of the sounding strategy and decreased her use of the initial-letter strategy for two syllable words. It appeared that this very negative set of school circumstances convinced Susan that the information and strategies she was being taught within the programme were necessary to bring her reading up to School Certificate English standard.

The programme taught positive self-beliefs. Susan was taught that it was necessary that she believe in the effectiveness of the sounding strategy but outside influences rather than the programme teaching appear to have been responsible for triggering her change in strategy behaviour. The knowledge taught within the programme would have enabled her to begin to be more successful in applying the sounding strategy. When she finally realised that her reading achievement was not yet satisfactory, the programme teaching gave her the knowledge and strategies for an effective way forward. It gave her the explicit knowledge that the sounding strategy might be a way to improve her reading achievement; explicit knowledge she had not possessed before the programme.

At the end of the programme, Susan was asked what she thought had helped the most. She replied "reading through the letter groups" (in the word). She also said that learning the short vowels for

English instead of Maori had helped! She had developed very positive self-beliefs about the effectiveness of the knowledge and strategies the programme taught. These new self-beliefs were reflected in her increasing use of the sounding strategy for two syllable words. She evidently had not realised yet that she needed to extend sounding to one syllable words as well.

When Susan learned to read Chapter books, she developed unrealistic self-beliefs about her ability to read. In addition, when she entered the programme she had insufficient and incorrect letter-sound knowledge. She frequently miscued when she attempted to use the sounding strategy. Because of this lack of knowledge and consequent lack of success in using letter information to decipher words there was an element of learned helplessness in Susan's application of the knowledge and strategies taught in the programme in 1998. That is, during 1998, a combination of unrealistically inflated self-beliefs about her ability to read and unrealistically negative self-beliefs about her ability to use sounding successfully, prevented Susan from completely engaging in the application of the programme taught knowledge and strategies for deciphering words.

In 1999, school circumstances deflated her self-beliefs about her reading ability. At the same time she was becoming more successful at sounding. Her self-beliefs about the programme taught knowledge and strategies changed. Her reading behaviours changed. She adopted the programme taught knowledge and strategies more fully. She increased her use of the sounding strategy and decreased her use of the initial-letter strategy. It is very sad that illness, an accident and events in the school programme prevented Susan from attending the programme regularly and perhaps prevented her from higher achievement.

Susan's Language Profile

Susan had some difficulties with pronouncing words. These appeared to be of two types. First, there were words for which she did not appear to have discriminated the sounds in the words clearly and accurately (nuse/use, amitted/admitted, excape/escape). A confusion between 'f' and 'th' occurred regularly through the running records (wif/with). A second type of pronunciation problem occasionally occurred where Susan had inconsistent difficulties with pronouncing some words (pedesgians/pedestrians). In some instances her miscue could be seen to be a direct result of her phonemic awareness difficulties (view/few, and drama/drummer. For the second miscue, Susan thought she had said "drummer" and was indignant that she should be queried about her choice of word).

At the beginning of the programme, Susan's vocabulary was in the low average range with an age equivalent of a little more than eleven years (see Table 7.10). At the finish of the programme, she had improved to the high average range with an age equivalent of just over sixteen years. The PPVT-R is a measure of receptive vocabulary. To predict words from the meaning in the text, as Susan had been taught to do, requires a good expressive vocabulary. With such a low receptive vocabulary at the beginning of the programme, she must have experienced difficulty trying to predict words from meaning as she read.

Some subtests from the CELF-3 were used to give an insight into Susan's receptive and expressive language abilities (see Table 7.10). Her Word Classes and Recalling Sentences scores were very similar at the beginning and end of the programme. She had made a gain in score for Word Associations and a significant gain in score for Formulating Sentences at the end of the programme.

Table 7.10.Susan's standardised scores for the Peabody Picture Vocabulary Test - Revised (PPVT–R) and selected subtests from the Clinical Evaluation of Language Fundamentals - Third Edition (CELF–3).

	1998			1999		
	St. Score	PR	CI 90%	St Score	PR	CI 90%
Peabody Picture Vocabulary Test—Revised (PPVT–R)						
	84	14	80 - 94	105	63	98 - 116
Clinical Evaluation of Language Fundamentals—Third Edition (CELF–3)						
Subtests						
Word Classes	9	37	7 - 11	8	25	6 - 10
Formulated Sentences	5	5	3 - 7	13	84	11 - 15
Recalling Sentences	8	25	6 - 10	8	25	6 - 10
Word Associations	7	16	4 - 10	11	63	9 - 13
Rapid Automatic Naming	Errors 0/3			Time	46/65 secs.	
	Equivalent Age = 13+ years		Equivalent Age = 13+ years			

Note: St Score = standard score; mean standard score PPVT–R = 100; Mean standard score CELF–3 = 10; PR = percentile rank; secs. = seconds; CI = confidence interval.

Answering the Recalling Sentences subtests, Susan sometimes added or omitted endings to words (cooker/cook, compute/computers). She often substituted words of similar meaning (completed/finished). She omitted words and phrases from the more complex sentences which contained several pieces of information. Her scores were lowered in both administrations of the Word Classes subtest because she sometimes forgot the four words in an item.

At the beginning of the programme, Susan's score for Formulating Sentences was lowered by her difficulties with grammar. These included problems with agreement of tense, agreement of singular and plural forms, confusion of the endings est and er, and finally difficulties using 'either' and 'or'. Many of these problems had disappeared when the test was readministerd at the end of the programme.

Table 7.11. Susan's raw scores for the subtests of the Queensland University Inventory of Literacy (QUIL).

Queensland University Inventory of Literacy

Subtests	P/Sc	Raw Scores							
		1998				1999			
		15/6	28/8	29/10	23/11	22/2	22/4	27/7	19/10
Nonword Spelling	24	0	2	2	1	1	3	4	2
Nonword Reading	24	3	3	6	5	8	5	2	4
Syllable Identification	12	11	11		11			12	
Syllable Segmentation	12	11	10		12			12	
Spoken Rhyme Visual Rhyme	12	11	12		10			12	
Spoonerisms	20	4	10		3			8	
Phoneme Detection	12	7	9		6			6	
Phoneme Segmentation	12	5	8		7			6	
Phoneme Manipulation	10	1	6		3			3	

Note: P/Sc = possible score.

Susan's scores for word associations had also lifted by the end of the programme. Although she gave approximately the same number of foods in both administrations of the subtest, she could give many more examples of animals and jobs in the end-of-programme administration.

In summary, scores that were dependent on memory (Recalling Sentences and Word Classes) did not show any improvement by the end of the programme. However, there were improvements in Susan's vocabulary, sentence formation and word associations. Perhaps the increased exposure to words in text and the continual necessity to predict and confirm words from meaning had contributed to her increased vocabulary, Formulating Sentences and Word Association scores.

Susan's nonword reading remained poor throughout the programme (see Table 7.11). She was proficient at identifying the syllables in words and breaking words into syllables. She said she had been taught to do this at primary school. She could identify spoken rhymes.

She had more difficulty hearing the phonemes in words, breaking words into phonemes and particular difficulty with taking a specified phoneme out of a word. It should be noted that all the phoneme identification and manipulation scores improved at the beginning of the programme when phoneme identification was taught as part of the programme. They regressed again when phoneme identification was no longer taught. It appears that continuing the teaching of this knowledge may have been beneficial for Susan.

Susan appeared to have deficits in her phonological processing abilities. She had some pronunciation difficulties, which appeared to be associated with poor differentiation of the sounds in certain words. Her scores for phoneme identification and manipulation in words were low. When these were actively taught within the programme, the associated scores lifted but regressed when this teaching ended. Her miscues early in the programme showed her difficulties associating sounds correctly with their letter groups It appears that phonological processing deficits may have had a causal relationship with Susan's reading problems, as postulated by Stanovich (1986).

Susan's Visual Difficulties

In three instances Susan miscued as a result of a problem with letter orientation (2 x b/p back/pack, peev/bivouac). There were also instances where Susan showed difficulties with the letter order in a word (time/item, Badly/Baldy, was/saw, slipping/spilling, feel/flee) and the accurate visual discrimination of words of similar appearance (well/we'll). These miscues were infrequent in this running record but they do indicate that Susan did not have the automaticity for the recognition of letter orientation, letter order and accurate letter discrimination that fluent readers enjoy. There is also the possibility that when Susan was younger her visual difficulties were more pervasive.

Susan's Story

When Susan entered the programme, she could read many one and a few two syllable words. She rarely attempted multisyllabic words. Her miscues were usually words with the same initial letter, a similar appearance to the text word and contextual meaning in their sentence. But some were cued from contextual meaning only and some she had attempted to sound through. Her reading was

characterised by inconsistent accuracy in recognising high frequency one syllable words, inaccuracies with letter groups and commonly used word endings, a high self-correction rate and a slow reading speed. Closer scrutiny of Susan's reading speed revealed that she was fluent when reading the words she knew, but her speed was reduced by the large number of words she had difficulty with.

In her initial assessment, Susan's beliefs about her reading ability ranged from slightly optimistic to optimistic. She believed she was average at oral reading and below average at silent reading, comprehension and speed of reading. She chose as 'easy to read' text a passage that lay within Clay's (1985) easy text category; a passage that was realistically easy for her to read. When reading such 'easy' text she believed that she usually knew the best ways to read the words, and that she didn't try hard to decipher the difficult words but instead frequently guessed.

When Susan entered the programme she was learned helpless. She believed that the sounding strategy was very difficult to use and ineffective. She said that she only looked at the initial letter or blend of a difficult word. She would attempt to sound the initial blend but if she could not decipher a word she missed it out. She did not attempt to monitor her reading for miscues.

But her reading behaviours did not always match her statements. She frequently attempted to sound words, especially words of three or more syllables, but also a number of words of one and two syllables. However, her attempts were often affected by her lack of letter-sound knowledge and strategies. Susan's attempts at deciphering were further hampered because, although of Caucasian descent, she attempted to decipher English text using the Maori vowel sounds, which she had been taught at school. These difficulties would have contributed to her belief that sounding was a difficult and ineffective strategy.

Susan had average listening comprehension but she displayed a cluster of difficulties which were likely to have contributed to her very poor word recognition ability. Her QUIL scores showed her phonological processing problems with segmenting and manipulating the sounds in words. Her non-word reading score of zero showed her lack of letter-sound knowledge for deciphering. She had visual processing difficulties with letter orientation and letter order in words. All these problems would have made it difficult for Susan to use accurate letter-sound information for word recognition.

Susan also had a cluster of difficulties which would have made it difficult to use the meaning and syntactic cues effectively. She showed difficulties with integrating letter-sound knowledge with contextual meaning when she was using the sounding strategy. She complained that when she

sounded a difficult word it disrupted the story line and she lost the meaning. Her PPVT-R vocabulary score was low average. Her CELF-R subtest results showed possible problems with recalling language and syntax difficulties.

To summarise, although her listening comprehension was above the mean for her age when she entered the programme, Susan had severe difficulties with word recognition. She displayed a cluster of difficulties that were likely to be impeding her progress. These included phonological and visual processing problems, difficulty integrating letter-sound knowledge and contextual meaning when using the sounding strategy and, finally, poor vocabulary and syntactic knowledge. She could not silent read with comprehension. She had slightly optimistic to optimistic beliefs about her reading ability. She believed that sounding was a difficult and ineffective strategy. Despite her beliefs, she did use the sounding strategy frequently. She also used the strategies from her previous reading teaching. But she did not display persistence with difficult words and often missed difficult words out. She was learned helpless in her word recognition behaviour.

During week seven of the programme, Susan learned how to silent read with comprehension. She discovered books written by R. L. Stine. She became an enthusiastic, intrinsically motivated reader and read many Chapter books during the programme.

This success with reading Chapter books influenced her self-beliefs about her ability. By November, she believed that she was one of the better readers in the school for silent reading, oral reading and comprehension and average for speed of reading.

Initially, the programme teaching was reflected in her statements about her strategy use. In October, as a result of the strategy section of the teaching programme, she reported that she had been starting to achieve some success with sounding. She said that she was using it to decipher words and that she was reading on and rereading to use meaning when she was unsuccessful. She claimed that she monitored her efforts by looking to see if her word fitted the letter groups and made sense in the sentence.

But the reading behaviours that she reported she used in October were not reflected in the miscue analysis of her word recognition behaviour. As a result of her inflated belief that she was now a very successful reader and her dysfunctional belief that sounding was a difficult to use and ineffective strategy, she decreased her use of sounding during 1998. In November, she openly stated that she could not see any reason to use the sounding strategy. Although an avid reader, Susan exhibited learned helpless behaviour for deciphering unfamiliar words.

At the beginning of 1999, against all advice to the contrary Susan insisted on joining a School Certificate English class. Here, because of her low word recognition ability, she was unable to read the set text the class was studying. With this failure, she changed classes and joined the alternative English class as the school had recommended. In spite of this experience Susan continued to hold inflated beliefs about her ability. She rated her oral reading as average and her silent reading, comprehension and speed of reading as being comparable with those of the better readers in the school. As a result of these inflated ability beliefs, she now made self-efficacy judgements that enabled her to read very difficult text. By the end of the programme, she rated as 'easy to read' text which lay in Clay's (1985) hard text category.

Although Susan did not change her stated ability beliefs, she did change her reading beliefs as a result of her inability to read the School Certificate text. She began to believe that she should use the programme taught letter-sound information and strategies to decipher difficult words. As 1999 progressed, she came to believe that sounding was an effective strategy when she used English, instead of Maori, vowel sounds. She came to believe that she always knew the best ways to decipher difficult words, that she always tried hard and never guessed.

As a result of her changed self-beliefs about the letter-sound knowledge and strategies she was being taught in the programme, she changed her reading behaviours. Throughout the two 1999 terms, she increased her use of the sounding strategy markedly and decreased her use of the initial-letter strategy. Her strategy running record miscue analysis shows that during 1999 she became more consistent at using the sounding strategy for words of two syllables or more. She became more persistent in her attempts to work out difficult words.

In addition, Susan began to monitor some of her attempts at sounding. By the end of the programme, she had become more flexible in her application of sounding and would sometimes change strategies if her first attempts were unsuccessful. Susan began to acquire a more mastery-orientated approach to learning. She became less learned helpless.

Her ability to segment and manipulate sounds in words showed some improvement as a result of the teaching in Phase I, but this slight progress was largely lost by the end of the programme. Her non-word reading scores indicated some increase of letter-sound knowledge until February in 1999 but then declined again.

Unfortunately her attendance during 1999 was very sporadic as a result of her participation in the school production and a series of illnesses. This seriously impeded her reading achievement.

Despite Susan's difficulties with phonological processing and letter-sound knowledge, her initial reluctance to use the sounding strategy and her frequent absences during 1999, her Neale and Burt scores both showed a steady increase of just over one year in the year-long programme. Reading these tests with their emphasis on increasing word length and increasing use of less often used letter groups, Susan actively attempted more words, but still skipped several. She had learned to recognise more two and three syllable words but remained inaccurate in deciphering letter groups and word endings. But she did not begin to use the programme taught knowledge and strategies fairly consistently and persistently until 1999. In addition, the teaching in 1999 was seriously disrupted by her absences from her lessons. As a result, Susan did not show an increase in her rate of achievement as a result of her changed reading behaviours.

For the fluency running record series, no overall gain was recorded in reading accuracy but Susan's scores became more consistent in the second half of the 1999 programme. No overall change was recorded in her strategy running record series. When reading text with a high number of one and two syllable words and fairly rich contextual meaning, Susan continued to make frequent use of her initial-letter strategy with its associated high miscue rate.

Susan's language ability improved during the year, apparently as a result of the teaching programme and her enthusiastic independent reading. Her PPVT-R vocabulary score increased from low average to high average. Her CELF-3 Formulating Sentences subtest results showed an improvement in her syntactic knowledge. These gains should in turn have increased Susan's ability to use the meaning and syntactic cues more effectively as she read.

In summary, Susan's progress was impeded through 1998 by her self-beliefs. At the beginning of the programme, she believed that the sounding strategy was an ineffective and difficult to use strategy. She was, therefore, learned helpless about using it although, contrary to her early statements she did attempt to use it for longer words. Early in the programme, as a result of her new success at reading books containing several chapters, she developed very inflated beliefs about her reading ability. As a result of this combination of beliefs, she became convinced that she did not need to use the sounding strategy and her use decreased through 1998.

Her unfortunate experience with trying to enter a School Certificate English class did not change her stated highly inflated beliefs about her reading ability. But it did change her belief that using the sounding strategy was unnecessary. As a consequence, she changed her reading behaviours. She increased her use of the sounding strategy markedly during 1999. Unfortunately, her belated start and

her continued absences prevented her from increasing her rate of gains in achievement as a result of her increased use of sounding.

By the end of the programme, Susan's phonological processing and letter-sound knowledge had not improved greatly. Clearly, continued instruction was required in these areas. However, Susan's Neale and Burt scores show a gain of a year in reading achievement in a year. Although her progress was not accelerated, if her reading gains are compared with the reading achievement she had made in all her previous years of schooling, which included remedial reading instruction, it can be seen that the programme was successful. In all probability, this instruction would have been more successful if Susan had had consistent attendance in 1999.

For Susan, a one-year programme was not long enough. She required a programme that was long enough for her to change her beliefs, long enough for these beliefs to effect changes in her reading behaviours and, finally, for her changed reading behaviours to effect changes in her reading achievement.

CHAPTER 8

Case Study 5: Tom

Tom was a 14-year-old Year Nine, adolescent at the beginning of the programme and of Maori descent. His Neale Form 1 (Neale, 1988) equivalent age score for reading accuracy was 8.0 years. An informal listening comprehension test using the Neale Form 1 texts gave an equivalent age score of greater than 12.9 years as Tom's score was above the standardisation level. His raw-score/test-ceiling-score ratio was 35/33. He had scored an age percentile rank of 57 in the school's administration of the Progressive Achievement Test of Listening Comprehension (Reid, Johnstone, & Elley, 1994). Comparison of his reading accuracy score with his two listening comprehension scores showed that Tom fulfilled the criteria for a reading disability, as his extremely poor word recognition was preventing him from achieving his likely reading comprehension potential.

His extremely low literacy achievement had resulted in Tom being placed in the Year Nine special needs class. In 1998, there were two special needs classes for both year nine and year ten pupils. In 1999, there was only one such class at each level and Tom was mainstreamed.

In his early years, Tom had had a very close relationship with his Mother, being the only child in a solo parent relationship. His Grandmother stated that his Mother read to him a lot and that his progress at school had been normal in these early years. When he was about eight, his Mother moved into a new relationship. Tom did not get on well with his new Stepfather; there was a lot of yelling and, in addition, several changes of school. Recently Tom's family moved to Australia but, because of difficulties with his Stepfather, he had returned to New Zealand to live with his Grandmother.

Maori language and culture had a place in Tom's family life with his maternal Grandmother as she said that she and Tom listened to the Maori Radio Tahu FM. Education was valued in Tom's family and Tom had an Aunt who was completing a B.A. In Australia, Tom had been sent for private, one-on-one, reading tuition. This had included at least the sounds for the short vowels. Tom said that this tuition was discontinued because he had refused to attend.

His Grandmother expressed concern that Tom socialised with younger children at home. She was also concerned that the videos that Tom watched were very childish, for example, *Bambi* and *Pete's*

Dragon by Walt Disney. The school Guidance Counsellor described these as being very safe for Tom. It seemed likely that this behaviour was an expression of underlying emotional problems. Efforts were made to enable Tom to receive some counselling but he refused to attend.

In addition to his emotional problems, Tom also had continuing sinusitis for much of the programme. He often said that he was tired although he attributed this to staying up late at night. The school nurse was informed of his problem in 1999, doctor's visits were arranged and medication prescribed to control the underlying allergic reaction. However, Tom often did not take this medication.

Tom's Reading Programme

Tom's school word recognition instruction had been based on the Ministry of Education's recommended strategies (Department of Education, 1985) of predicting the word from the contextual meaning and the visual information. Tom had also received some private remedial reading in 1997 that included letter-sound information.

Early in the programme, Tom's behaviour became very difficult. He insisted he wanted to leave the programme but was informed that he required a note from his Grandmother giving her permission. It was extremely difficult to enforce his attendance at his lessons and his behaviour was often obstructive. Because of these behavioural problems, Tom was encouraged to believe he had the ability to learn to read well from the fifth week of the programme. In weeks 13-16, the section of the programme where positive self-beliefs were taught, Tom was taught further beliefs. These were that the knowledge and strategies he was being taught were effective and that he could control his learning if he applied them consistently and persistently.

Tom's Reading Profile

Standardised Assessments

Tom's Neale Reading Accuracy equivalent age scores (see Figure 8.1) show a gain of a year during the four terms of the reading programme. Six months of this progress occurred during the 'teaching strategies' portion of the programme. The regression line accounts for a high 74 % of the variance.

At the beginning of the programme, Tom had difficulty reading many of the two syllable words (shoulder, secret, palace). His miscues involved incorrect tense (stops/stopped, runs/ran) and

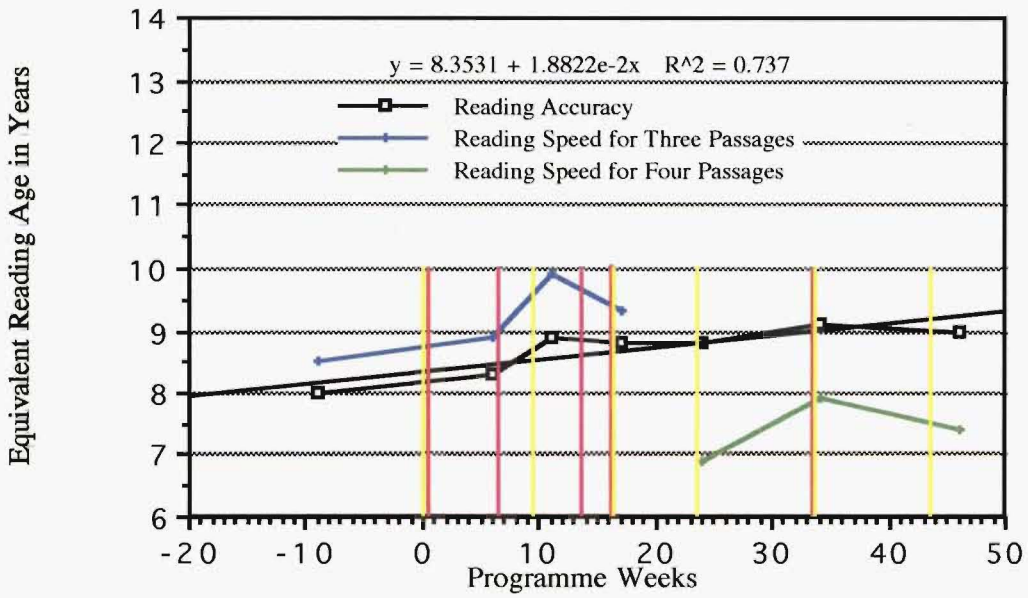

Figure 8.1. Tom's Neale Reading Accuracy and Reading Speed age equivalent scores.

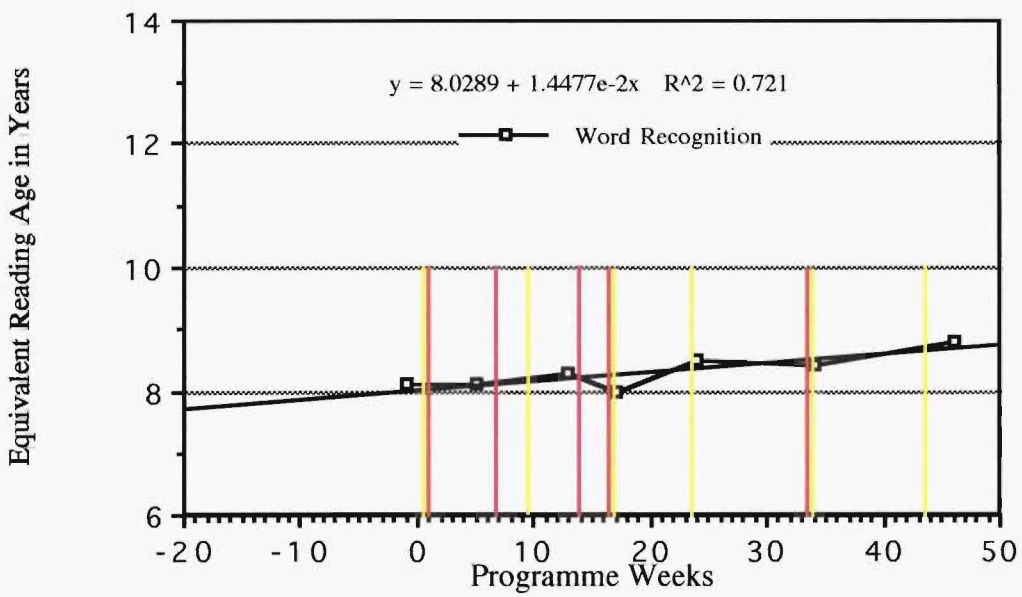

Figure 8.2. Tom's Burt Word Reading age equivalent scores.

incorrect syntax (lays two children/lay two children). By the end of the programme, Tom could read the more regular two syllable words (progress, stumbled, swiftly). His miscues were often words of similar appearance to the text word (terror/territory, ferociously/furiously, wrapping/whipping). Sometimes he miscued an initial blend (tainer/trainer) or vowel (strick/struck); did not accurately decipher the word ending finally/final, powerful/powerfully); or did not attempt the word (crouched, accustomed, prepared).

Tom's Burt Word Recognition (Gilmore, Croft, & Reid, 1981) scores showed only a six month improvement (see Figure 8.2). A comparison of this result with his Neale assessment result shows the improvement in his scores was less when he read words in isolation than it was when he read text. This indicated that Tom used the meaning in the Neale text as an additional cue for word recognition. As with the Neale, the regression line for his Burt scores accounted for a high 72 % of the variance.

Tom read with a similar range of miscues from the isolated words of the Burt. He did not attempt several of the more regular words (shelves, explorer), he miscued with words of similar appearance to the test item (quietly/quickly) and he was inaccurate with word endings (nurses/nurse).

By the end of the programme Tom was correctly reading more multisyllabic words (steadiness, overwhelmed, commenced). But he still miscued with words of similar appearance to the test item (serious/service) and was inaccurate with word endings (believe/belief, know/known).

Tom's reading speed was very depressed for his age. Listening to his reading revealed that he was fairly fluent when reading many words that he knew. His reading speed scores were depressed because there were so many words he had difficulty deciphering.

His reading speed over the first three texts had a range of eight and a half to ten age equivalent years. Addition of the fourth text lowered Tom's reading speed to between seven and eight age equivalent years. The addition of an additional text at a more difficult level had more effect on Tom's reading speed than the programme did.

Tom's Burt and Neale scores show that Tom made progress of between six months and a year in word recognition during the programme. His slightly higher scores and slightly greater improvement when reading text indicated that Tom was making use of meaning to help decipher the words. His difficulties in deciphering words and depressed reading speeds show that he had not gained automaticity in letter-sound associations.

Weekly Fluency Running Record Assessments

Tom read 10–12 age equivalent journal text for the fluency running record series. Each fluency running record was timed. Tom would therefore have been aware that reading speed was a focus of this series of running records.

Tom's fluency running record percentage accuracy scores showed an increase during 1998 but were very variable (see Figure 8.3), both for different readings from the same text (up to 6%) and for readings from different texts (up to 10%). The scores ranged through Clay's (1985) hard, instructional and easy text ranges. This variability reduced through 1998 with the last four scores ranging between 94% and 97%. Three of these last four scores lay within Clay's easy text range. The regression coefficient suggested that the programme accounted for a moderate proportion of the variance.

Table 8.1. Tom's percentage accuracy and reading speed means for the weekly fluency and strategy running record series.

Assessment Name	Programme Week Numbers	Mean
Fluency RR % Acc.Graph	1-32	93.2%
Fluency RR % Acc. '98	1 – 16	92.6%
Fluency RR % Acc '99	17 – 32	94.7%
Fluency RR Fluency Graph	1-32	58.8 w/m, RA 8.7 y
% Acc. Strategy RR Uncorrected	1-33	85.4 %
% Acc. Strategy RR Self-Corrected	1-33	90.9 %

Note: % Acc. = % Accuracy; uncorrected = % accuracy when all stumbles and miscues are counted before self-correction; self-corrected = % accuracy after self-correction; RA = Equivalent Reading Age; RR = running record; w/m = words per minute; y = years.

At the beginning of 1999, Tom's scores had dropped slightly. His first four fluency running record scores ranged between 93% and 95%, within Clay's (1985) instructional difficulty level. His remaining scores lifted into Clay's easy text level with a range of between 95% and 97 %, with the exception of one score. The mean percentage accuracy lifted slightly from 93% in 1998 to 95% in

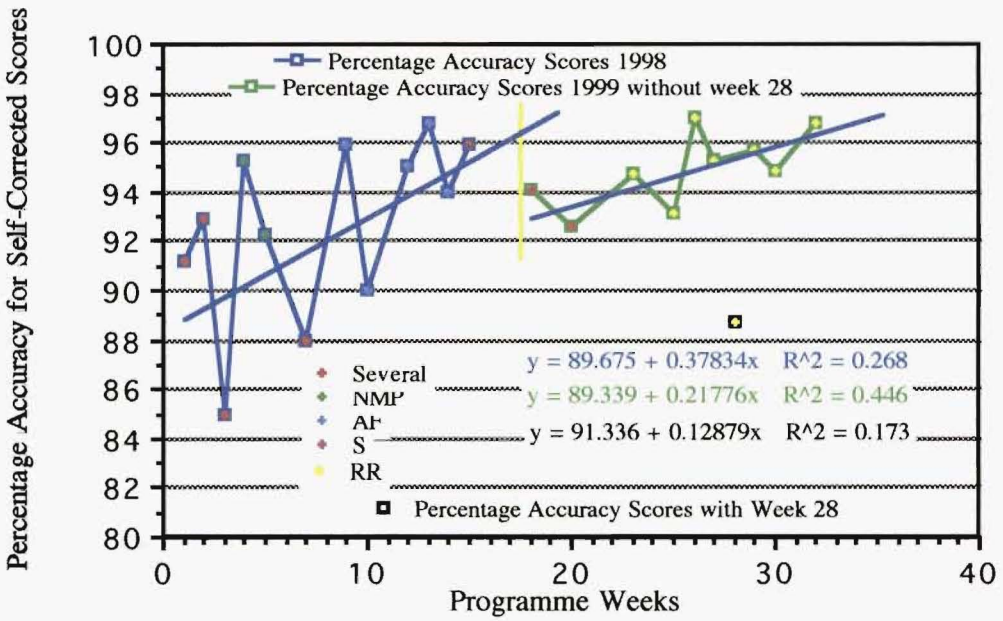

Figure 8.3. Tom's weekly self-corrected percentage accuracy scores for the fluency running record series.

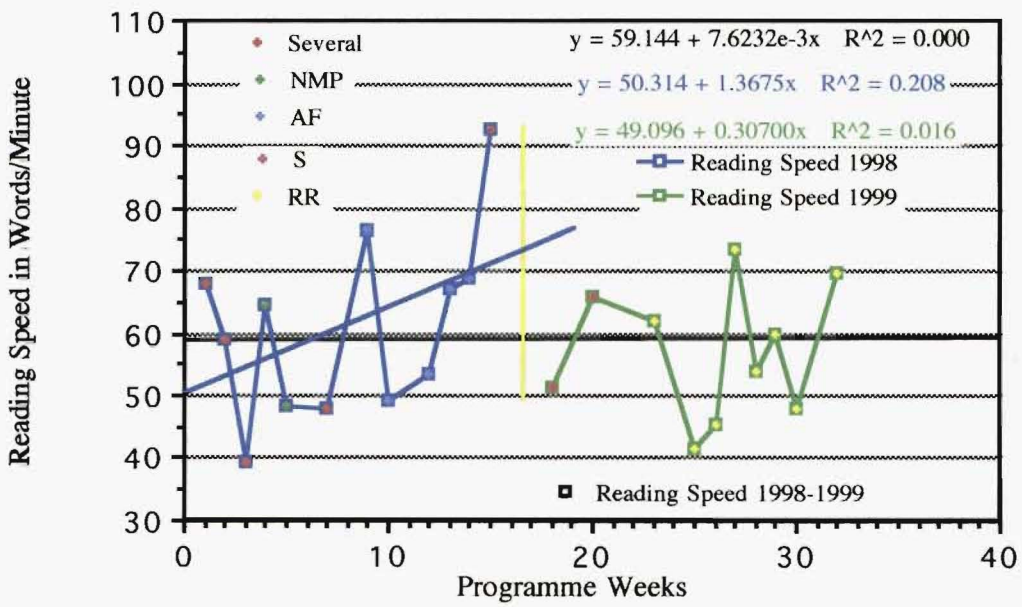

Figure 8.4. Tom's weekly reading speed scores for the fluency running record series.

1999 (see Table 8.1). Apart from Tom's score for week 28, his percentage accuracy scores showed that this 10–12 year journal material was consistently within Tom's easy reading level by the end of the programme. In 1999, the regression line shows an overall 4% increase in Tom's scores and the regression coefficient suggests that the programme accounted for a moderately high percentage of the variance.

Scanning the list of miscues for week 28 and for the weeks preceding and following did not reveal any obvious reason for the very depressed score for this running record. As with the other records the miscues were for the most part words of similar appearance to the text word (his/this, clowns/crowd), miscued tenses (decided/decides) and miscues involving inaccurate decoding of word endings (fly/flying).

Tom's reading speed was very slow. His mean reading age was 8.7 age equivalent years. When he read, Tom had many words that he identified fluently. Although words that he could not decipher were supplied after approximately six seconds, his scores were depressed by the many words that he had difficulty in recognising in each passage and the time taken to decipher these words (or supply the word if necessary).

His reading speed was also very variable, both for scores for different readings within one text and for readings on different texts. During 1998 there was an increase in reading speed. The regression line shows an increase of 20 words/minute and the regression coefficient suggests that the programme accounted for a moderate proportion of the variance. During 1999, there was no overall change in the reading speed and when both the 1998 and 1999 scores are considered there was no overall change in reading speed associated with the programme.

To summarise, the programme was responsible for decreasing the variability of Tom's percentage accuracy reading scores. Towards the end of the programme this decrease in variability resulted in all except one score lying within Clay's (1985) easy text range. Associated with this decrease in variability there was a slight gain of 2% in the mean percentage accuracy score for 1999 compared with the mean for 1998.

Reading speed scores remained very variable throughout the programme because of Tom's difficulties with word recognition. There was no systematic overall change in their value that was associated with the programme. His low reading speed scores and his persistent 3-5 % miscue rate in his later scores showed that, by the end of the programme, Tom had not yet gained automaticity in reading letter information for word recognition.

Examples of Miscues

Scanning through the running record series of weekly miscues revealed that Tom only occasionally sounded a word (tr-amp-ing). Most of his miscues appeared to be real words that had a similar appearance to the text word although often a quite different meaning (motor/moment). Sometimes he just waited for the word to be supplied (suitcase, balanced).

Several groups of miscues were examined. These miscues involved pronouns, tense, contractions of two words and the similar word groups of/from/for/form.

- Appendix R, Table R1 lists Tom's miscues that involved pronouns. Tom usually miscued with a word of similar appearance to the text word. Exceptions included you/Mum, you/kids. Appendix R, Table R1a gives examples of the miscues in their context. It can be seen that Tom has predicted each of the miscues from the meaning in the preceding sentences.

- Tom's miscues involving tense are listed in Appendix R, Table R2. In the majority of the examples, Tom has used the past tense in place of the present tense although there are some instances of the reverse (see week 28 laughs/laughed). There are also examples where he replaced a participle with the past tense (see week 30, padding/padded) or the reverse (see week 9, jabbed/jabbing). When examples of these miscues are considered in their context, it is evident that Tom predicted the miscued word from the context in the preceding sentence. If he was aware of inconsistencies in the syntax as he read on (see Appendix R, Table R2a: examples 9a, 9b and 28e), he self-corrected.

- Appendix R, Table R3 lists Tom's miscues involving contractions of two words. Apart from one example (see week 1, always/well/we'll), all the miscues have similar appearance to the text word. Reviewing the two word contractions in their context (see Appendix R, Table R3a) reveals that some are syntactically incorrect when they are considered in relation to the following text (see example 20a). It appears that Tom had not developed a good knowledge of correct grammar.

- There was only one miscue in the running record series involving the similar words of/for/from/form. The miscue was for/from/x and it occurred in week 9.

To summarise, for this fluency running record series, Tom's miscues were nearly always words of similar appearance to the text word and were frequently predicted from the preceding sentences. In addition, Tom sometimes did not attempt the word aloud but instead, waited for it to be supplied. He did sometimes self-correct if he perceived an inconsistency in the meaning or syntax. However, he

did miscue with syntactically incorrect words which remained uncorrected. He showed a poorly developed knowledge of syntax. These results are in line with the previous findings regarding Tom's lack of automaticity and lack of accuracy when deciphering letter information.

Weekly Strategy Running Record Assessments

Tom read 11-13 year age equivalent journal text for the strategy running record series (see Figures 8.5 and 8.6). The emphasis in this series of records was on the strategies that Tom used to decipher unfamiliar words. Tom was questioned on strategy use at the end of each running record. He would therefore have been aware of the emphasis for this series of assessments.

Most of Tom's uncorrected percentage accuracy scores lay between 82% and 90% which spans Clay's (Clay, 1985) hard text level (see Figure 8.5). The scores were very variable. This variability between the scores appears to have been greater between scores from different texts than between scores for readings from the same text. The regression line shows an overall increase of 3% but the regression coefficient shows that this was insignificant when it was considered in relation to the week-to-week variability. Even when a regression line was drawn with the scores from weeks 1, 18 and 30 omitted, the variance accounted for by the programme remained relatively insignificant.

After self-correction most of the scores lay between 89% and 93% (see Figure 8.6). That is, they lay close to or within Clay's (Clay, 1985) instructional level of difficulty. Self-correction lifted the mean percentage accuracy 5% (see Table 8.1). Some scores were lifted 6% or more from their uncorrected values. To some extent, Tom compensated for his lack of automaticity and accuracy for word recognition with his very high self-correction rate.

The self-corrected percentage accuracy scores were less variable than the uncorrected scores, but still very variable. The regression line shows a very small overall decrease in percentage accuracy but the regression coefficient shows that this decrease was insignificant when it is considered in relation to the week-to week variability.

To summarise, for this strategy running record series, Tom's scores did not show any gains related to the programme. The uncorrected scores were very variable. The self-corrected scores were also very variable but less variable than the uncorrected scores. The rate of self-correction was high and accounted for a mean gain of 5% for the self-corrected scores compared with the uncorrected scores. This high rate of self-correction and the range of most of the self-corrected scores between 89% and

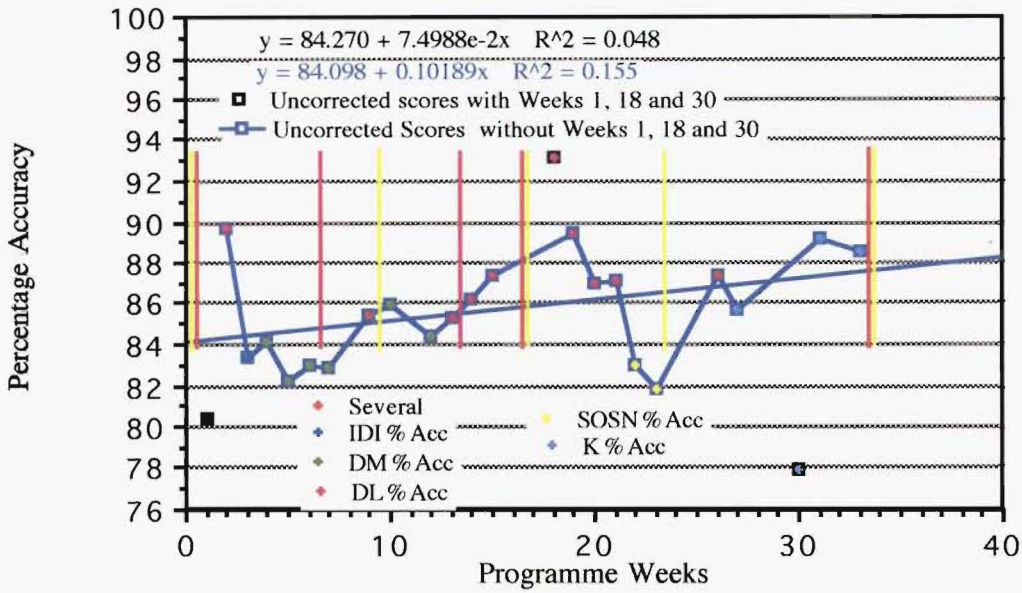

Figure 8.5. Tom's uncorrected weekly percentage accuracy scores for the strategy running record series.

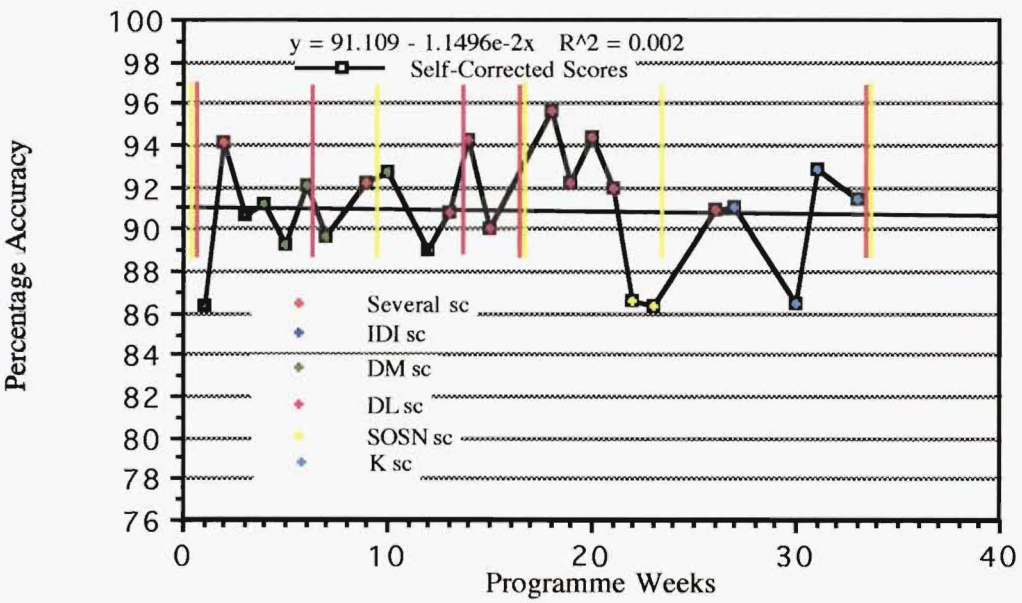

Figure 8.6. Tom's weekly self-corrected percentage accuracy scores for the strategy running record series.

93% showed Tom's lack of accuracy and automaticity when reading journal text rated at 11–13 age equivalent years.

Strategy Use for Word Recognition

Tom's strategy use was further analysed using the strategy categories previously described. The mean number of miscues for each category is given in Table 8.2 as a percentage. The raw data is given so that the effect of the small sample sizes can be appreciated.

Relative Proportional Use of Each Strategy

Table 8.2 shows that Tom's two preferred strategies for word recognition were the sounding and initial-letter strategies. He used the sounding strategy nearly twice as often as he used the initial-letter strategy and made occasional use of three other strategies, the meaning in the text, word appearance and asking (asking is used for both asking what the word was or missing it out completely). The regression lines for Figures 8.7–8.11 do not show any change in the proportional use of these strategies associated with the programme.

Tom's percentage use of the initial-letter strategy was very variable with a range of between 10% and 50% and a mean of 31%. The percentage use for the meaning, inventing and asking strategies were usually less than 10%.

Table 8.2. The strategies Tom used for deciphering his miscues.

	∑ Str. Misc.	Sounding	Initial Letter	Meaning	Similar Word	Ask
Mean 98-99	26.7	14.5	8.8	1	1.2	.8
Range Raw Score		7 – 29	1 – 24	0 – 3	0 – 4	0 - 3
Mean %		55.7	31.2	3.7	5.0	2.4
Mean % 1998		55.0	31.2			
Mean % 1999		56.6	31.2			

Note: The values in this table supplement the raw data chronicled in Figures 8.7 – 9.11. ∑ Str. Misc. = The sum of the strategy miscues; RD = raw data..

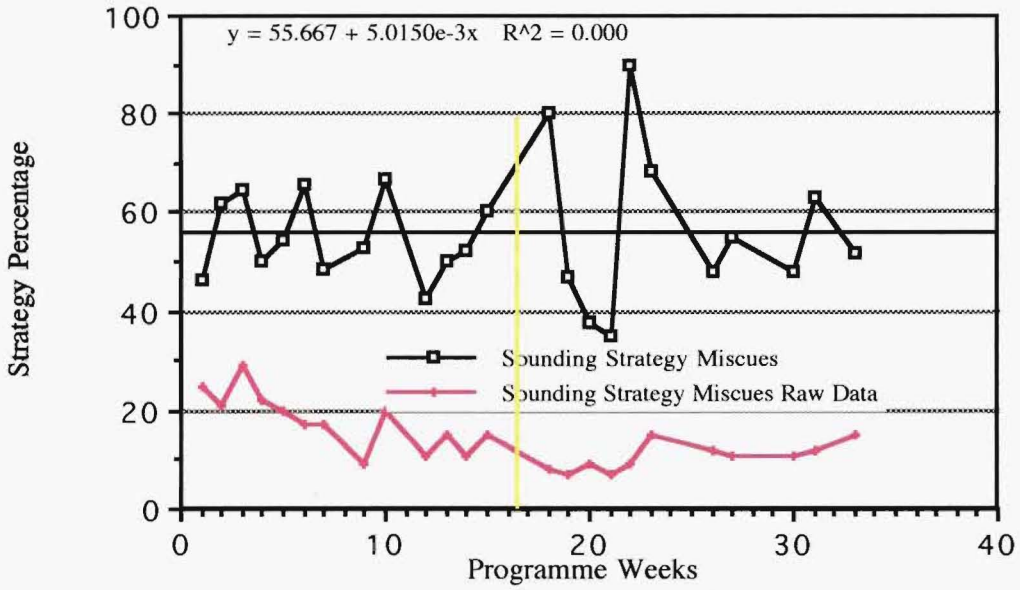

Figure 8.7. Tom's weekly percentage use of the sounding strategy in the strategy running record series.

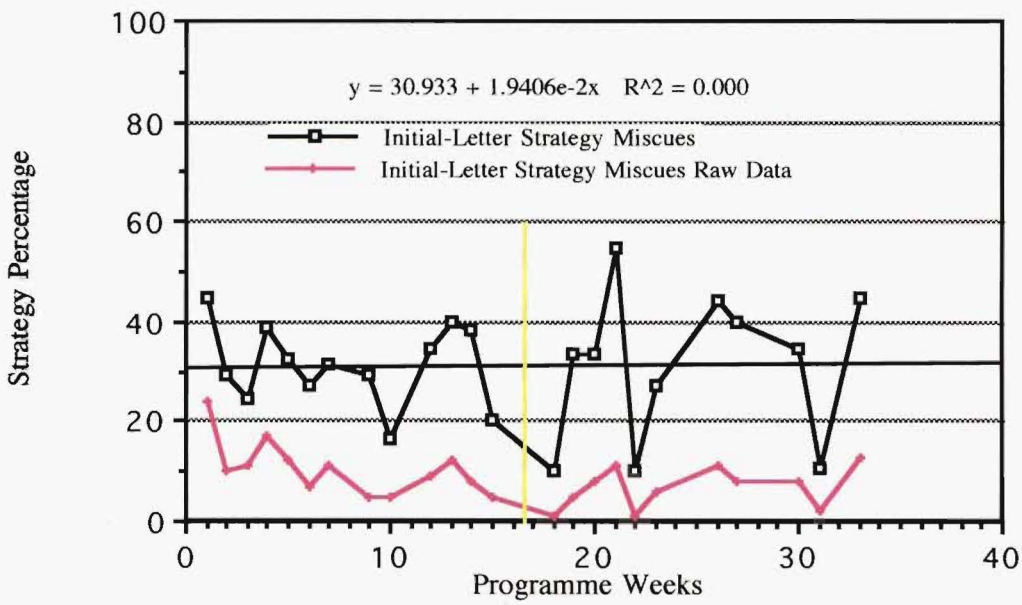

Figure 8.8. Tom's weekly percentage use of the initial-letter strategy in the strategy running record series.

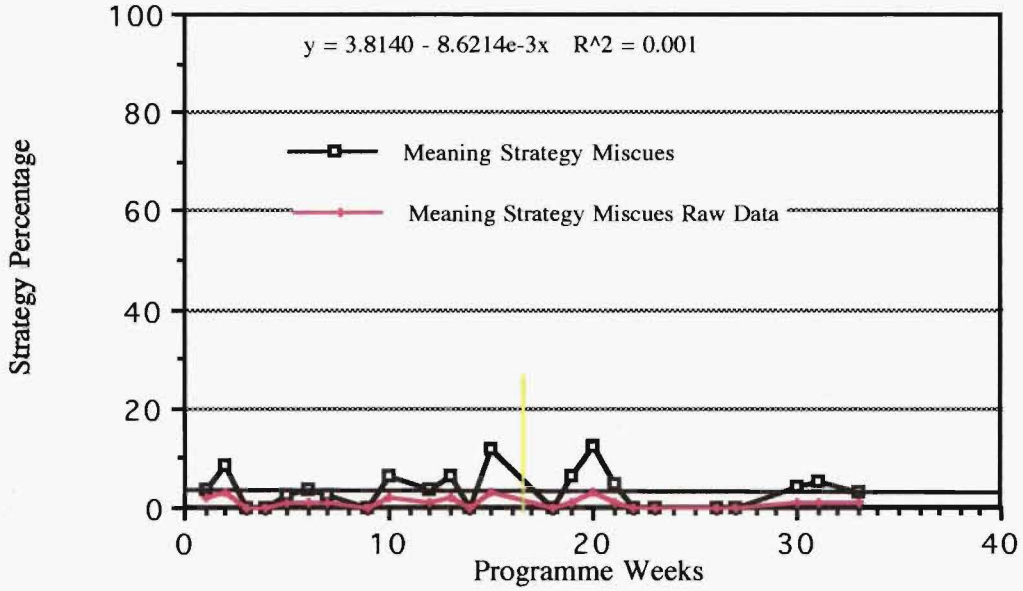

Figure 8.9. Tom's weekly percentage use of the meaning strategy in the strategy running record series.

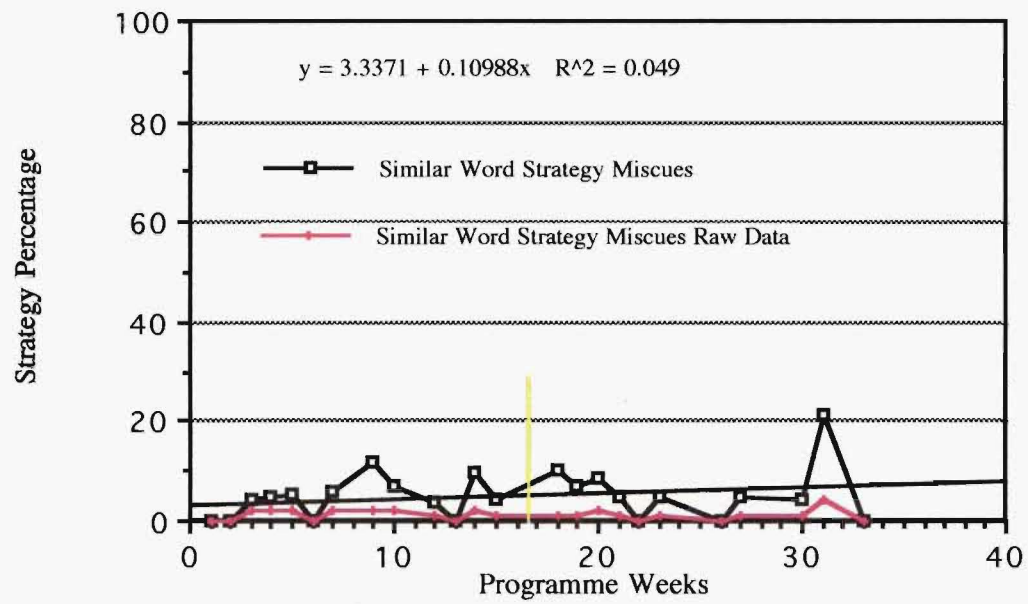

Figure 8.10. Tom's weekly percentage use of the similar word strategy in the strategy running record series.

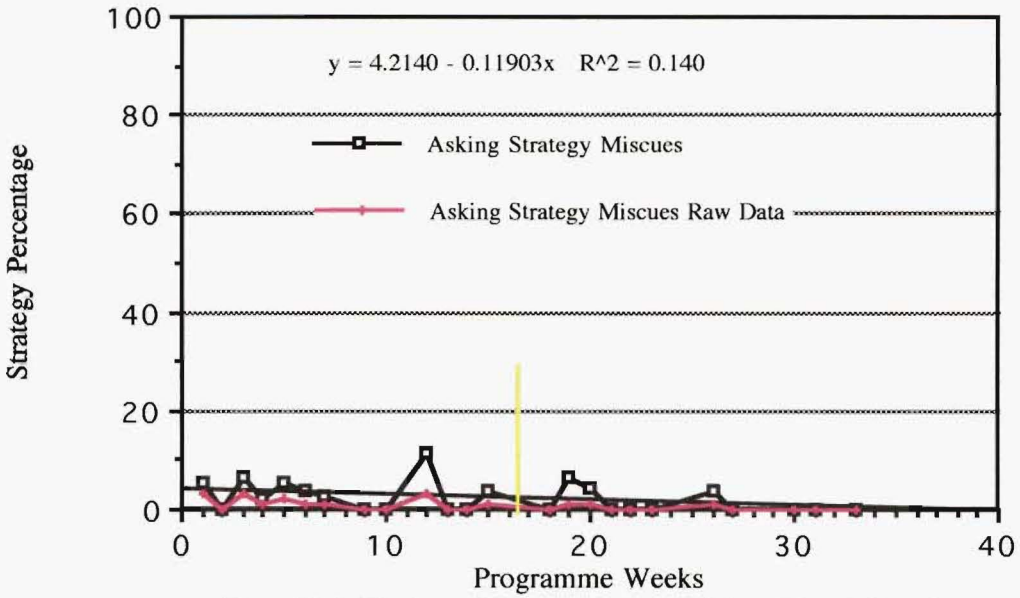

Figure 8.11. Tom's weekly percentage use of the asking strategy in the strategy running record series.

In this strategy series of running records, he used the sounding strategy to attempt from 40% to70% of the miscues with a mean percentage use of 56% (see Table 8.2 and Figure 8.7). The percentage use that Tom made of the sounding strategy was very variable with variations that were often of the order of 30%. In the first half of 1999, the variability was even greater with a range of nearly 60%.

Tom's high use of the sounding strategy was likely to have resulted from his previous private reading tuition during 1997. This programme also emphasised using sound-letter knowledge for word recognition. That is, the programme teaching was emphasising knowledge and strategies that Tom had already experienced.

Self-Correction Behaviours for Each Strategy

Tom self-corrected nearly twice as often when he used the sounding strategy as he did when he used the initial-letter strategy (see Table 8.3). The percentage of miscues that Tom self-corrected was very variable from week to week for the sounding and initial-letter strategies. The regression lines for both show a decrease in self-correcting behaviour of 10% but the regression coefficients show that this decrease is insignificant when considered in relation to the week-to-week variability (see Figures 8.12 and 8.13).

Table 8.3. The proportion of miscues that Tom self-corrected for each strategy.

	% Sounding sc	% Initial-Letter sc	% Similar Word sc
Mean	53.2	28.8	35.3
Range	22 - 78	0 - 100	0 – 100

Note: sc = miscue self-corrected, Sounding = sounding strategy Initial-Letter = initial-letter strategy, Similar Word = similar word strategy.

Looking at the raw score data shown for the initial-letter strategy (see Figure 8.13), it can be seen that some of the very high self-correction percentages are associated with very small sample sizes. It is also evident that very small sample sizes have distorted the differences in the percentage values greatly for the meaning and similar word miscues (see Figures 8.14 and 8.15).

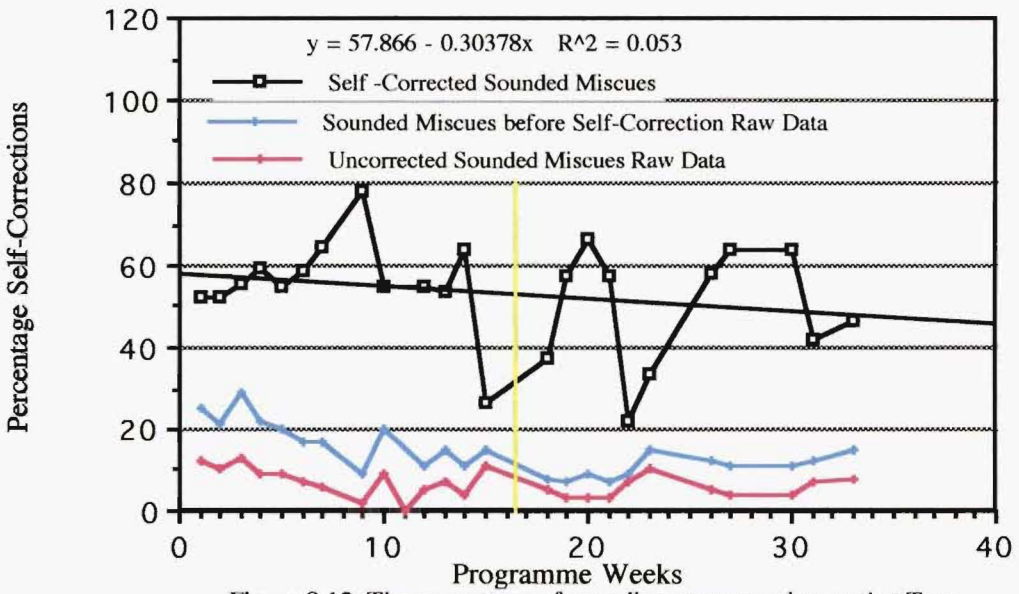

Figure 8.12. The percentage of sounding strategy miscues that Tom self-corrected for the strategy running record series.

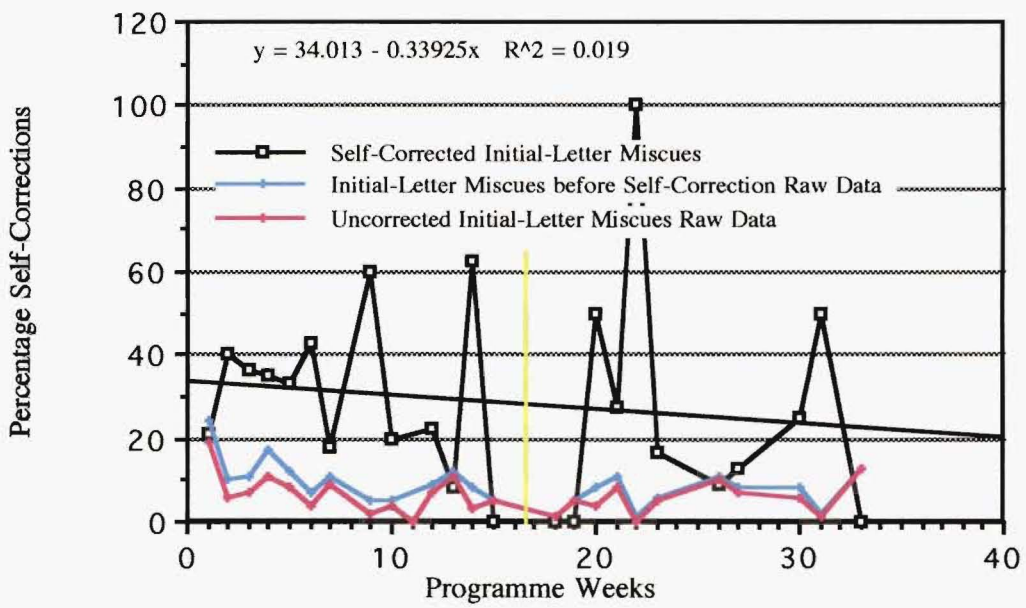

Figure 8.13. The percentage of initial-letter strategy miscues that Tom self-corrected for the strategy running record series.

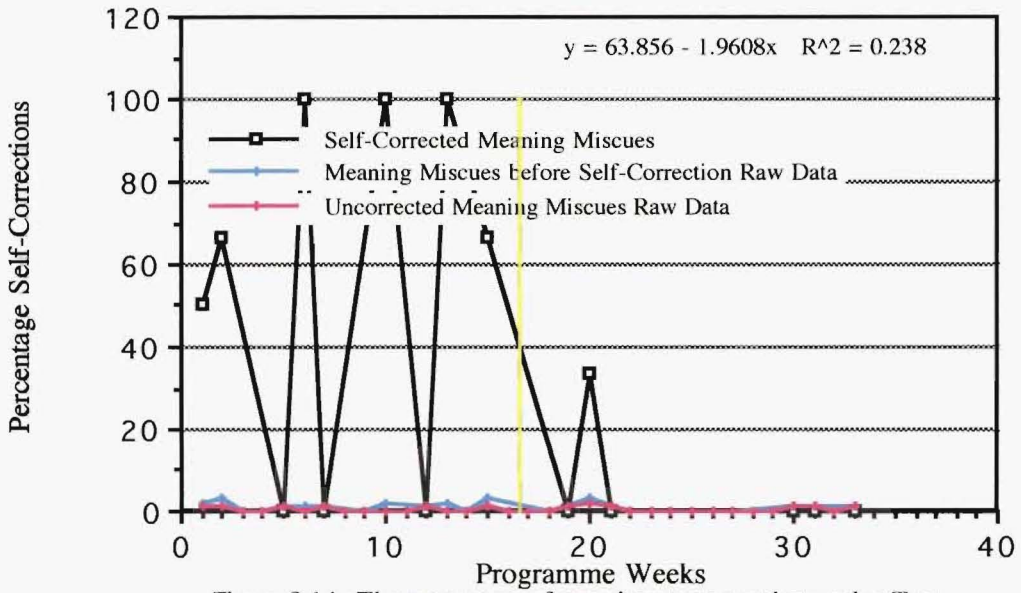

Figure 8.14. The percentage of meaning strategy miscues that Tom self-corrected for the strategy running record series.

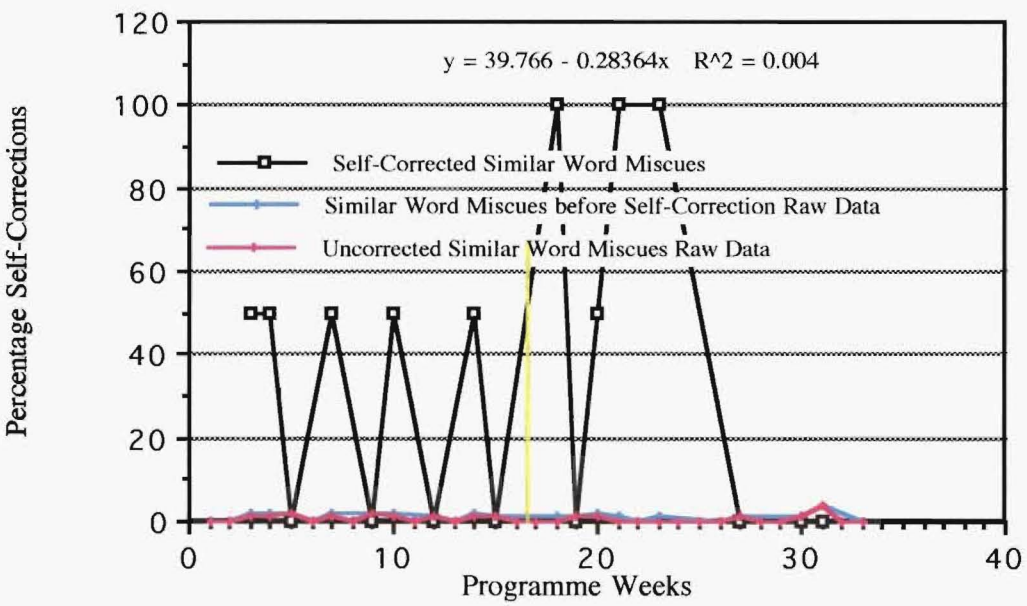

Figure 8.15. The percentage of similar word strategy miscues that Tom self-corrected for the strategy running record series.

Characteristics of the Sounding and Initial-Letter Strategies

When Tom used the initial-letter strategy, his miscues were usually real words, of which two thirds were words of similar appearance to the text word (see Table 8.4). The fact that so many of these initial-letter miscues had a similar appearance to the text word further supported the contentions, previously discussed, that Tom was reading with incomplete letter information and lacked the accuracy and automaticity to decipher the letter information accurately.

Table 8.4. The characteristics of Tom's sounded and initial-letter strategy miscues.

	% Real Words	% Similar Words	% Meaning Words
	Sounded Miscues		
Mean	38.5	25.3	12.8
Range	8 - 80	0 - 80	0 - 33
	Initial-Letter Miscues		
Mean	96.7	64.9	57.1
Range	75 - 100	0 - 100	0 - 100

Note: Meaning Words are words that gave an acceptable meaning within their sentences. This was not necessarily the author's meaning nor did the meaning necessarily fit with the rest of the passage.

A little over a third of Tom's sounding miscues were real words, only a quarter of the words were of similar appearance to the text word and an eighth had meaning in their context. To compare the characteristics of the initial-letter strategy miscues with those of the sounding strategy, the initial-letter strategy miscues were:

1.) nearly three times as likely to be a real word;

2.) two and half times as likely to be a word of similar appearance; and

3.) nearly five times as likely to have meaning in the text.

Tom would have been taught to rely on inconsistencies in meaning and syntax to inform him that he had miscued. He was unlikely to have received feedback that he had miscued for those initial-letter miscues which were real words with a similar appearance to the text word and with meaning for him in their context. For over half of his miscues, where he had made use of the initial-letter strategy, he would have had no way to know that he had miscued.

Tom had severe problems with word recognition and read with a very high miscue rate. This miscue rate must have, at best, altered the meaning of sentences for Tom. Often he would not have understood many sentences. He would, therefore, not have developed the expectation that text should

have very clear meaning for the reader. If this was so, then he was unlikely to have perceived that he had miscued with some of the words that were of similar appearance to the text word, but which did not have any meaning in the text.

On the other hand, when he used the sounding strategy, he often did not miscue with a real word, most words were not of similar appearance to the text word and very few had contextual meaning. Tom was therefore more likely to have been aware that he had miscued. That is, the feedback about his sounding strategy use would have been more realistic. Unfortunately, given these results, he is likely to have thought that he was more successful using the initial-letter strategy and less successful using the sounding strategy. These results are supported by the fact that he self-corrected his sounded miscues nearly twice as often as he did his initial-letter miscues.

Strategy Use and Word Length

Tom used the sounding strategy most frequently for words of two syllables or more (see Table 8.5). In fact, for four and five syllable words, he rarely used any other strategy. His percentage use was very variable from week-to-week (see Figures 8.16 – 8.19) especially for the two and three syllable words. Some of this variability resulted from the differences between the scores of very small word sample sizes becoming exaggerated when they were converted to percentages. The regression coefficient shows that any trend associated with the programme was insignificant in comparison with the week-to-week variability.

In addition, for two and three syllable words, Tom used the initial-letter strategy for approximately one quarter of his miscues. The week-by-week variability was high. Again, small sample sizes have resulted in the distortion of the differences between the weekly scores (see Figures 8.21 and 8.22). The regression coefficient shows that the programme had no overall effect and a relatively insignificant effect for the two and three letter miscues respectively when any overall trends associated with the programme are considered in relation to this week-by-week variability.

Tom used a variety of strategies to attempt to decipher his one syllable miscues. He used the sounding and initial-letter strategies most frequently and showed a very small preference for the initial-letter strategy (see Table 8.5 and Figures 8.16 and 8.20). Again, the percentage use was very variable from week to week and the differences in the percentage scores were exaggerated by small sample sizes.

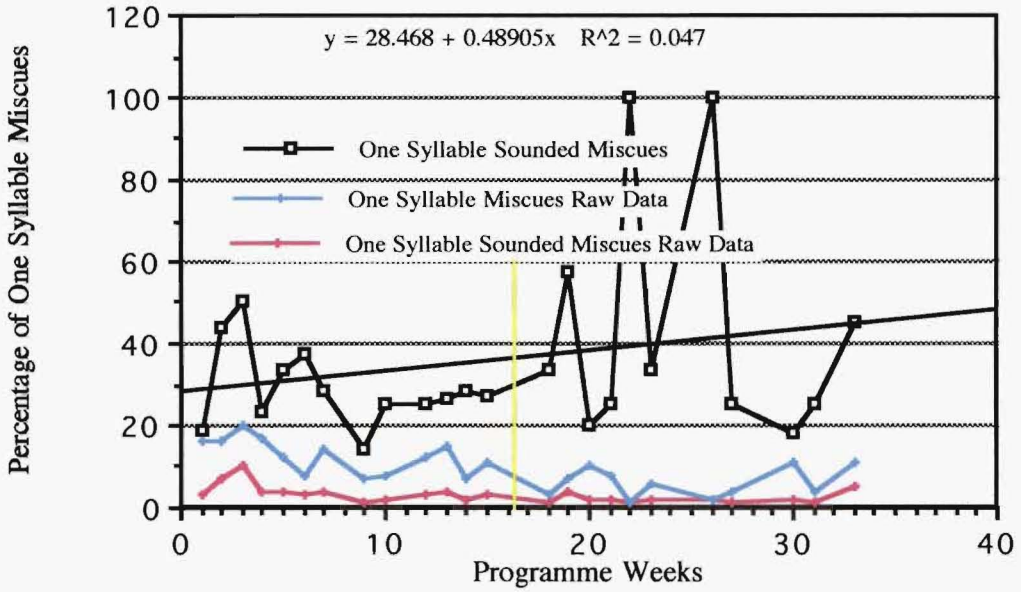

Figure 8.16. The percentage of one syllable miscues for which Tom used the sounding strategy.

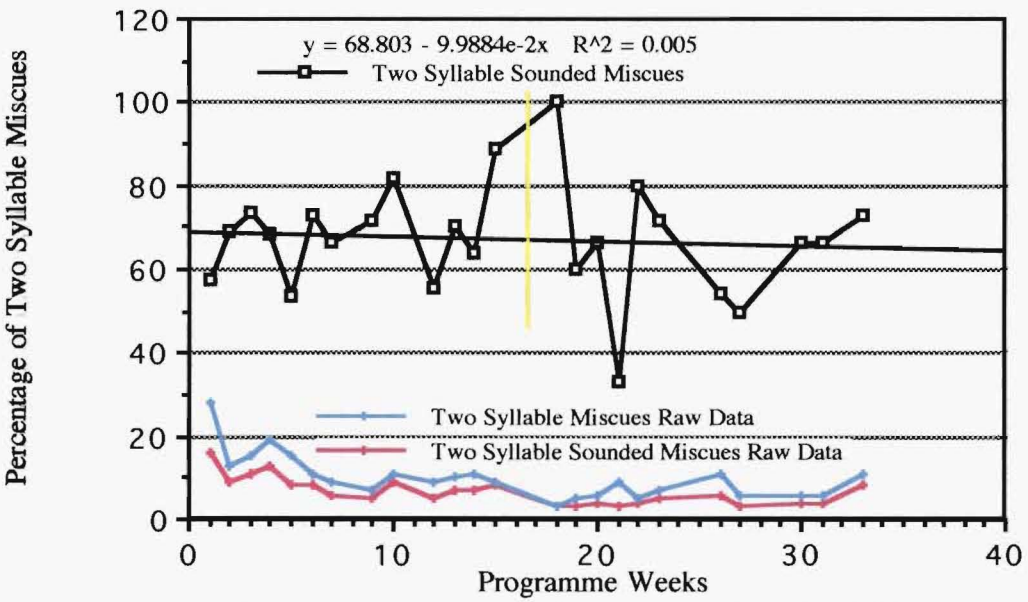

Figure 8.17. The percentage of two syllable miscues for which Tom used the sounding strategy.

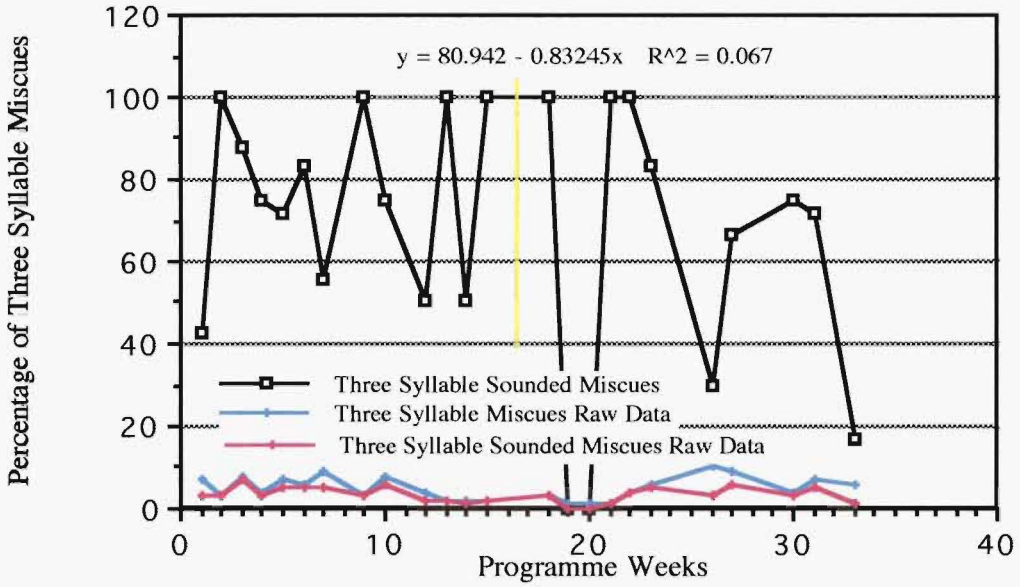

Figure 8.18. The percentage of three syllable miscues for which Tom used the sounding strategy.

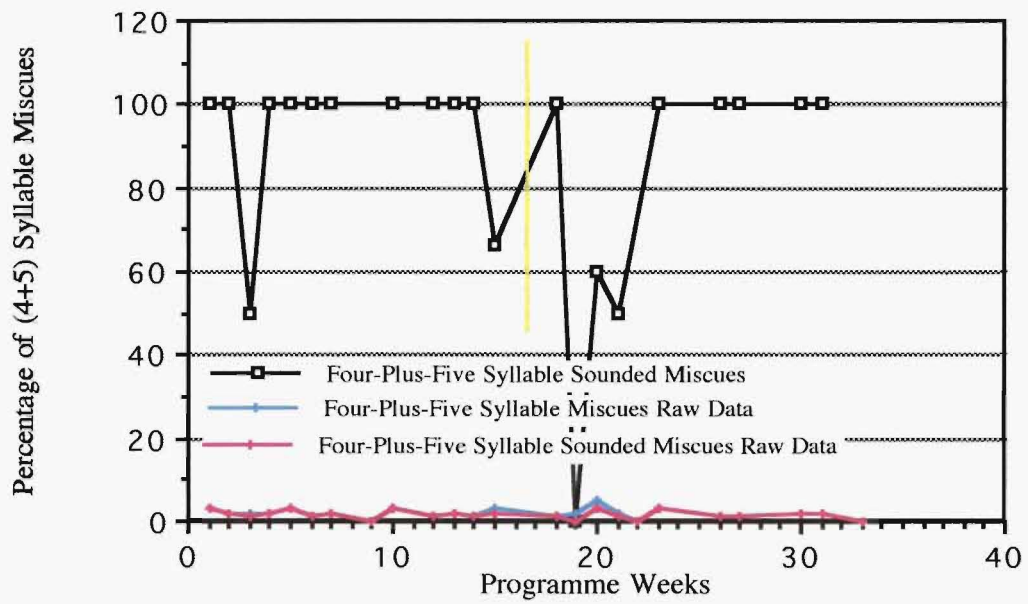

Figure 8.19. The percentage of four-plus-five syllable miscues for which Tom used the sounding strategy.

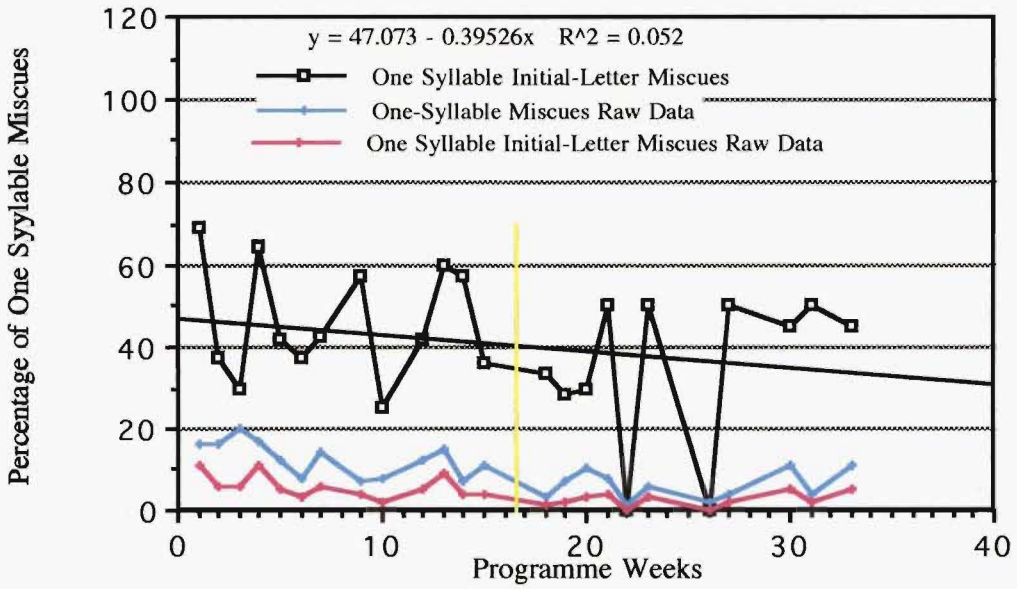

Figure 8.20. The percentage of one syllable miscues for which Tom used the initial-letter strategy.

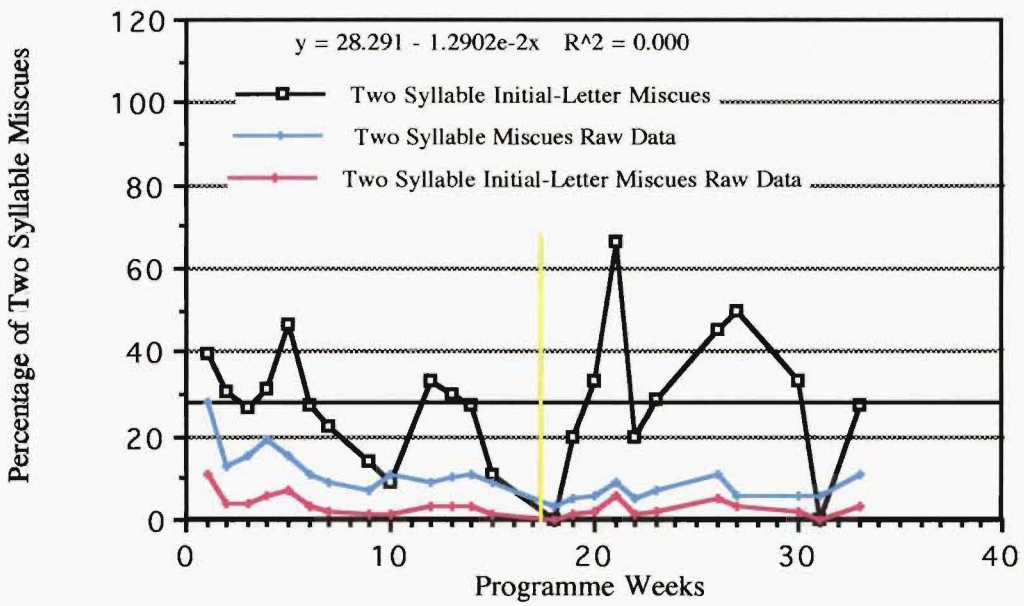

Figure 8.21. The percentage of two syllable miscues for which Tom used the initial-letter strategy.

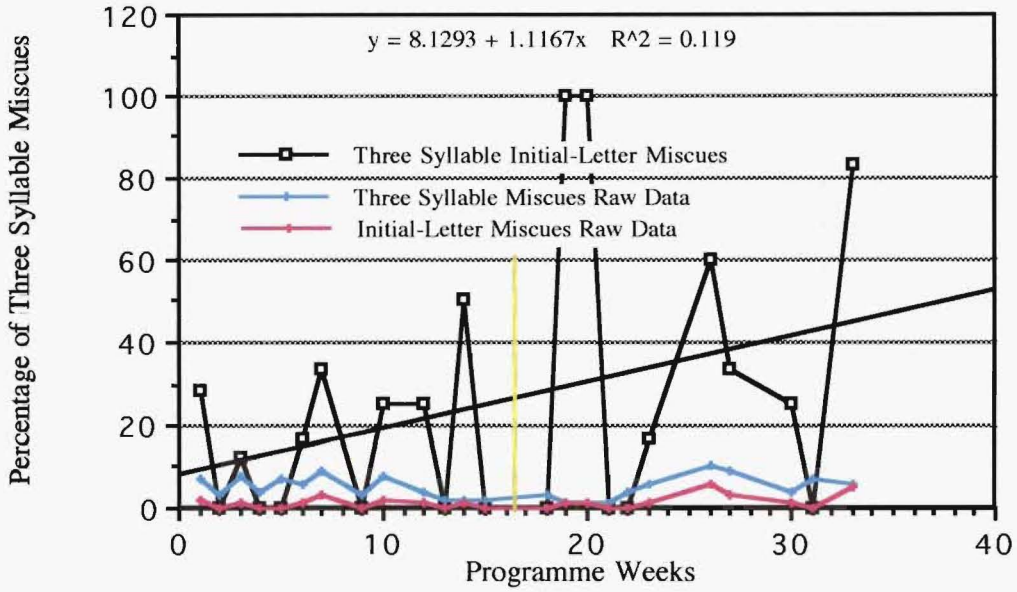

Figure 8.22. The percentage of three syllable miscues for which Tom used the initial-letter strategy.

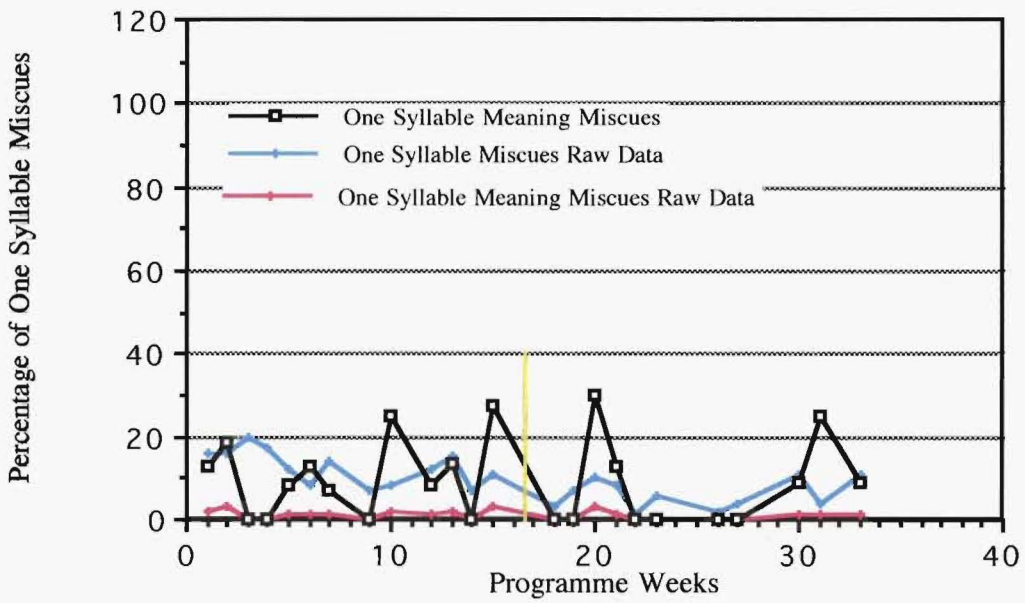

Figure 8.23. The percentage of one syllable miscues for which Tom used the meaning strategy.

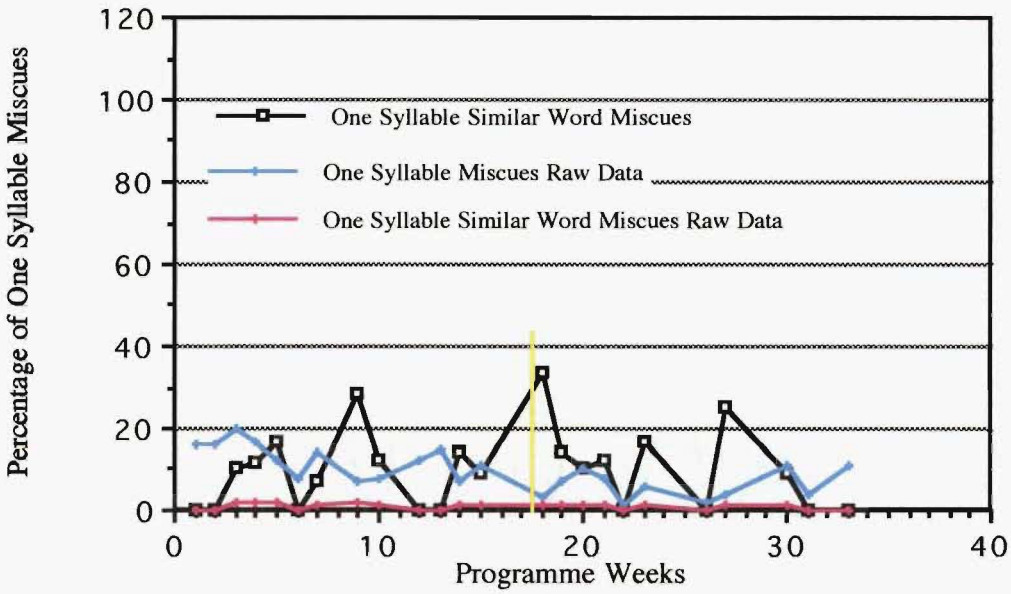

Figure 8.24. The percentage of one syllable miscues for which Tom used the similar word strategy.

Tom had made use of two additional strategies with the one syllable miscues. These were the meaning and similar word strategies. His use of these two strategies was infrequent, at approximately 10% each, but remained persistent throughout the programme.

Table 8.5. The relationship between Tom's choice of strategy and the number of syllables in the miscue.

	1 syllable	2 syllables	3 syllables	(4+5) syllables
	Sounded Miscues			
Mean %	36.0	67.3	68.1	87.0
Range %	14 – 57	33 – 100	0 – 100	0 – 100
∑Words Raw Data	73	159	78	37
	Initial-letter Miscues			
Mean %	41.0	28.1	25.4	4.3
Range %	0 – 690 – 30	0 – 67	0 – 100	0 - 50
∑Words Raw Data	103	74	29	3
	Meaning Miscues			
Mean %	9.1			
Range %	0 – 30			
∑Words Raw Data	23	1		
	Similar Word Miscues			
Mean %	9.6			
Range %	0 – 33			
∑ Words Raw Data	19	6	2	
	Inventing miscues			
∑ Words Raw Data	7	1		
	Asking Strategy			
∑ Words Raw Data	5	1	8	4

∑ Words Raw Data = The sum of the words with the number of syllables designated for the strategy.

To summarise, Tom's strategy use remained unchanged throughout the programme. He used the initial-letter strategy and the sounding strategy most frequently for unfamiliar one-syllable words

with the addition of the occasional use of the similar word and meaning strategies. For multisyllabic words, he usually used the sounding strategy for two thirds or more of his miscues.

The Initial-Letter Strategy

Appendix S, Tables S1 – S3 list the one, two and three syllable miscues for which Tom used the initial-letter strategy. Inspection of the miscues shows that they are real words that usually have a similar appearance to the text word. When the total sample is viewed, it seems likely that many of the words that may not appear similar to the correct text word to a proficient reader probably appeared similar to Tom. Therefore, the percentage similar word characteristic for the initial-letter strategy presented in Table 8.4 probably underrepresents the number of words that appeared similar to Tom.

Examples of these one, two and three syllable miscues in their context are presented in Appendix S Tables S1a – S3a. It can be seen that many of these miscues have been predicted from the preceding context in the sentence. It is likely that, for Tom, more of these miscues had some sort of meaning that he had predicted from the previous context than is apparent to an experienced reader. Because of his many years of difficulty with word recognition, it is unlikely that he had developed an expectation that text meaning should be very clear. Therefore, the mean percentage for a miscue that had meaning, for Tom, in its context is likely be under represented in Table 8.4.

Examples can be seen where Tom was aware of an inconsistency in syntax (see Appendix S, Table S1a, example 12d) and self-corrected. In other examples, Tom showed a lack of knowledge about syntax (see Appendix S, Table S1a, example 15a). In some cases Tom miscued two adjacent words as he maintained the syntax (see Appendix S, Table S1a, examples 15c & d).

Summary of the Programme Induced Changes for Tom

Tom had been taught to read by the then Department of Education's (1985) recommended process of repeated sampling of the text, predicting a word from the meaning and then confirming or self-correcting. As a result, Tom's miscues were often words with a similar appearance to the text word and meaning, at least for Tom, in their context. That is, Tom's initial-letter strategy was in line with the teaching strategies he had been taught at school. Unfortunately, he used incomplete and inaccurate letter-sound correlations and therefore frequently miscued.

In addition, Tom had received some private out-of-school tuition which had included knowledge about the letter-sound information for deciphering words. He used this strategy most frequently for words of two or more syllables. Unfortunately, because he refused to attend, his tuition had not lasted long enough for his knowledge to be sufficiently extensive to cover many of the words he encountered. He could not use this knowledge automatically when he joined this programme. Nor was his application of the knowledge accurate. He therefore frequently miscued.

This programme taught Tom phonemic awareness, letter-sound information including blends and phonograms and the strategies to apply this knowledge. The programme enabled Tom to achieve a six-month increase in his Burt score for word recognition and a one-year increase in his Neale score for reading accuracy.

For much of the first two terms of the fluency running record series using equivalent age 10–12 year journal articles, Tom's percentage accuracy scores were extremely variable. The programme was responsible for a reduction in this variability. By the end of the programme, Tom's scores consistently showed that these journal articles could now be regarded as easy text (Clay, 1985) for him. However, his many self-corrections showed that this was not the easy fluent reading of normally achieving readers. There was no change in his percentage accuracy scores that was associated with the programme for the strategy running record series, using journal articles graded for 11-13 year readers.

Tom's strategy use remained unchanged throughout the programme. His preferred strategy for deciphering two or more syllable words, was the sounding strategy and he used this strategy for over half his miscues. For multisyllabic words he used the strategy that the programme was teaching for more than two thirds of his miscues. It is likely that his previous private tuition, which included letter-sound knowledge, may have influenced him to use this strategy so consistently.

He used sounding for fewer of his one syllable miscues and preference for using the sounding strategy for deciphering multisyllabic words did not transfer to one-syllable words during the programme. This may be attributed to the fact that these miscues were often words of similar appearance to the text word, with meaning in their context, which Tom was unlikely to recognise as miscues. If he did not perceive the number of miscues he made, he would not have perceived a reason to change his reading behaviour for one-syllable words.

Throughout the reading programme, Tom persistently employed avoidance behaviours in the programme reading sessions. These avoidance behaviours, by reducing the effective teaching time in

the programme and the effectiveness of Tom's learning behaviours, would have limited his achievement during the programme. They and their effects are discussed in the next section.

Tom's Strategy Use and Reading Self-Beliefs

Tom as a Strategic Reader

At the beginning of the programme Tom knew to break the word into syllables and sound out the syllables (see Table 8.6) but said that he usually just asked somebody or missed the word out. He also knew that he could use meaning to decide whether or not he had arrived at the correct text word, but preferred to ask somebody.

Table 8.6. The cognitive strategies and metacognitive monitoring strategies that Tom stated he used to decipher unfamiliar words.

Date	Cognitive Strategies For Unfamiliar Word Recognition	Metacognitive Monitoring Strategies For Unfamiliar Word Recognition
25.6.98	Cut it up into syllables. Work it out. Sound out syllables. Go and ask somebody else. Mostly I do that. If no one else is around leave it, do something else, go off. Can't get a word go and ask. The hardest thing about reading is the words, mostly the words. Sometimes have difficulty finishing. Gets boring because I don't know some of the words so I just leave it.	See if it makes sense. Or ask somebody. Wrong word: wouldn't make sense. If it doesn't make sense go and ask somebody The hardest thing about reading is the word, mostly the words. Sometimes have difficulty finishing.
27.8.98	*Uncomfortable:* un-com-for-ta-ble, broke it up.	Didn't think whether it was the right word or not.
3.9.98	Read through the syllables	See if it makes sense.
15.10.98	*Communication:* comm-unn-i-ca-tion, changed 'u' sound – comm-un-i-ca-tion.	
29.10.98	Ask teacher. Sound it out. Give up and read on. Sometimes reads it. Can't get a word give up	Ask if it's right. Guess. I will know. Know its wrong from the letters. The way they are placed. Then I Figure it out or ask.
12.11.98	Tom used words he had seen in other places to help read unfamiliar words. He read 'office" because he remembered the word from "police office" at Eastgate Mall. He said he remembered "simple" in his Maths book and used this to read "simply". Recognised letter group ile because got to say /i/ (Hi) because of e.	
19.11.98	Sounded through words. Paid a lot of attention to accuracy. Checked whatever I was writing.	

Continued on the next page.

Table 8.6 continued from the previous page

23.2.99	*Expecting:* sounded it. Break it into syllables. *Stumble:* Sounded it. Can't work it out ask.	"Do you think about whether the word is right or wrong when you have worked it out?" No teacher says if it is right or not. "How might you know?" Wouldn't sound right. The word doesn't sound right. "Doesn't fit the sentence?" Yeah. " How do you know you have the wrong word?" Don't know.
11.3.99	*Deadly, distinctly, decidedly:* Sounded these out.	
4.3.99	*Civilised:* Didn't try.	
25.3.99	Sounded out words.	
15.7.99.	*Nevertheless:* Never- Nev-er-the-liss Nervously *Mysterious:* myst-er-us. *Blotted* bloted, blotted, changed the 'o' sound. Tom said he guessed it, guessed what to do. Uses sounding out and changing vowels. Not often because he hardly ever reads. If he read he would use these. Asks somebody else. Gives up if no one to ask. Thinks that maybe he could do it if he really tried. Sounding out works if he really tries. Asking somebody works.	
14.10.99	*Mournful:* mournful Went through some words that started with 'm'. *Deserted* sounded through. *Nevertheless:* Never-the-less. Mainly sounding out. Doesn't use any others.	

Note: The examples of unfamiliar words in this table were words from the *Neale* texts the levels for which are given for the corresponding dates in 8.8 or from the journal text read for that date.

By Week 5, Tom sometimes displayed good skills at sounding unfamiliar words through to find the text word. By week 10, he knew to change the vowel sound if his first attempt was unsuccessful. In spite of his developing strategic skills, in October he was still expressing dependent strategies such as asking or missing out the word.

In week 13, Tom's Grandmother reported that Tom was reading articles in the newspaper and asking what the difficult words were; new behaviour for Tom. By Week 14, Tom could transfer letter knowledge and word knowledge that he had gained in other situations to his reading in the programme (see Table 8.6). He could verbalise the effect of e on the preceding vowel. In spite of these developing skills, Tom continued, until nearly the end of the programme, to express the same learned helpless dependent attitudes to reading difficult words, that is skipping words out or asking.

By the end of the programme Tom thought that his reading had improved (see Table 8.7) He attributed this success to the strategies for reading the words that he had been taught in the programme, especially to sounding out the vowels and in particular the "two-letter" vowels.

Table 8.7. Comments and attitudes Tom expressed about his reading.

Date	Comments and Attitudes
25.6.98	Working hard to get meaning and words. Language and reading the words make it (text) difficult to understand.
29.10.98	Doesn't usually understand what he reads.
23,2,99	Thought his reading had improved a lot. Doesn't usually understand what he reads.
13.7.99	"I read better –strategies helped to sound out words and all that – like most words." Doesn't understand the words.
14.10.99	Programme has helped. Reads more and better. Can read in class now. Sounding out vowels, two letter vowels. Tom thought this programme had been more successful than his previous private tuition because he had stayed longer.

In the programme, Tom was reading in a supportive one-on-one situation. Despite his stated preferences to ask or skip words out his miscue analysis shows that he attempted to sound most words of two or more syllables (see Table 8.5) and that he made no effort on only 18 words in the entire reading programme. However he often gave up easily after an initial attempt and asked or just read on. He usually did not show persistence in trying to decipher difficult words.

Tom's Causal Attribution Beliefs

Tom was asked to rate his reading ability in comparison to his school cohort (see Table 8.8). Before the programme began, Tom thought that his oral and silent reading were average. These beliefs were likely to have been made as a result of his comparisons of his reading ability in class in relation to that of his special needs classmates. During 1998, he changed his ratings to a more realistic below average for silent reading and amongst the least able in the school for oral reading. In 1999, Tom was mainstreamed. During the programme in 1999, he believed he was below average for silent reading and below average, but no longer amongst the least able readers, for oral reading. One term after the programme finished he again rated his oral and silent reading as average. These final beliefs

indicated that Tom believed his reading ability had improved in relation to his mainstream classmates. He stated that he could read more in class.

Tom usually rated his reading comprehension as below average. Table 8.7 lists his consistent statements throughout the programme that he did not understand what he was reading, although in the sessions he was always observed to have understood the story line when he read. A term after the completion of the programme, he believed his comprehension was average and would be above average if he could read the words. It appeared that, as a result of the programme, Tom had changed his self-belief about his reading comprehension ability and, after the completion of the programme, correctly attributed at least some of his difficulties to his poor word recognition.

Table 8.8. Tom's ranking of his reading ability in comparison with the other pupils in his school year.

Date	School Year	Silent Reading	Oral reading	Comprehension	Speed of Reading
22.6.98	9	3	3	4	5
3.11.98	9	4	5	3	5
15.2.99	10	4	4	4	5
13.7.99	10	4	4	4	5
20.10.99	10	3	3	3 would be '2' if he could read the words	5
		Tom's rating of his last year's (year 9) reading ability from his year 10 perspective as an indication of how he thought he had improved.			
13.7.99	9	5	5	5	5
20.10.99	9	4	4	5 couldn't read the words and didn't read.	5

Note: Tom rated his ability on a scale of 1-5. On a par with the best readers in his school year = 1. The questions used to obtain this self-belief data are presented in Appendix F, question 6a.

At the beginning of the programme, Tom rated as easy reading a Neale text for which the alternate form lay within Clay's (1985) hard text level for him (see Table 8.9). He stated, he usually knew the best ways to read the difficult words, he guessed about half of these words and he worked to decipher about half of them. By the end of the programme, Tom could choose as easy text a Neale text which

lay within Clay's easy text level for him. On this easy text, he thought that he usually knew the best ways to read the words, he didn't guess and he tried hard to decipher them.

Considering the Neale text that he rated as hard text at the beginning of the programme, he believed he knew the best ways to read about half of the difficult words, tried hard to decipher most of them but guessed about half of them. By the end of the programme, he believed he usually knew the best ways to decipher the difficult words, he didn't guess and he usually worked hard. This change in beliefs about his knowledge of how to read difficult words and his reading behaviours indicated that he believed that the knowledge and strategies being taught in the programme were effective.

Table 8.9. Tom's percentage accuracy and causal attribution beliefs about reading the texts he rated as easy-to-read and hard-to-read.

Date	E:H	N	% Acc	Know/Don't Know	Guess/Didn't Guess	Try/Didn't Try
24.6.98	E	3	86	2	3	3
13.7.99	E	2	100	2	5	1
14.10.99	E	2	98	No difficult words	No difficult words	No difficult words
24.6.98	H	4	83	3	3	2
13.7.99	H	4	83	2	5	2
14.10.99	H	4	82	1	4	2

Note: The questions for the causal belief statements is given in Appendix D. The students' beliefs about their reading knowledge and behaviours were measure on a 1-5 scale. Know = 1, Guess = 1, Tried hard = 1. Know = know the best ways to read this; E = easy; H = Hard; N = Neale level for the Diagnostic Tutor passages; % Acc. = percentage accuracy that Tom attained in his reading assessment for the Neale passages for Forms 1 or 2 at the equivalent level to those selected by Tom from the Diagnostic Tutor that were used to determine these causal attributions.

Tom's self-efficacy judgements about his ability to read these two Neale texts that he had rated easy and hard is given in Table 8.10. For the self-rated easy text at the beginning of the programme, he thought he could independently read some of the page which, he said ,was neither difficult nor easy to read. By the end of the programme, he could choose as easy text a text he was confident he could read by himself and that he thought was usually easy to read. He believed that his self-rated hard Neale text was difficult to read and that he would have difficulty reading it on his own. This belief had remained unchanged throughout the programme. A term after the programme finished, he believed he could usually read the text independently but that it was difficult. His self-efficacy judgements about his ability to read very difficult text had become more positive.

Table 8.10. Tom's percentage accuracy and self-efficacy judgements about his ability to read his chosen easy-to-read and hard-to-read passages.

Date	E:H	N	% Acc	Can Read Page/Can't Read Page	Easy to Read/Hard to Read
24.6.98	E	3	86	3	3
13.7.99	E	2	100	1	2
20.10. 99	E	2	98	1	2
24.6.98	H	4	83	4	4
13.7.99	H	4	83	4	4
14.10.99	H	4	82	2	4

Note: Tom's self-efficacy judgements about his ability were measured on a 1-5 scale. Can Read =1, Easy to Read = 1. The questions for Tom's self-efficacy judgements are listed in Appendix D. E = easy; H = hard; N = Neale level from the Diagnostic Tutor; % Acc. = percentage accuracy that Tom attained in his reading assessment for the Neale passages for Forms 1 or 2 at the equivalent levels to those selected by Tom from the Diagnostic Tutor that were used to determine these self-efficacy ratings.

The programme had changed Tom's self-beliefs. He came to believe that his reading comprehension difficulties were a result of his word recognition difficulties. He learned to self-rate text as easy-to-read that lay within Clay's (1985) easy reading category and came to believe that he could read such text independently. He developed an increasing belief in his knowledge of how to decipher the difficult words in hard-to-read text. Associated with this, he came to believe that he rarely guessed these words, even for difficult text. That is, his perception of his increasing ability to read in class (see Table 8.7) had come to influence his self-beliefs, first, about both his ability to decipher words and comprehend text and, second, about his knowledge of effective reading behaviours that would bring success.

Tom's Avoidance Behaviours

However, Tom's reading behaviours did not always match his stated self-beliefs about trying hard to decipher the words. Unfortunately, Tom had developed a learned helpless attitude to his reading during his years of failure and possibly, in part, as a consequence of background emotional problems related to his relationships with his Mother and Step-Father. He continued to proclaim loudly that "reading's dumb" until the end of the programme. He agitated strongly to leave the programme at an early stage. By the end of 1998, although he still proclaimed that he wished to quit, he backed off in the very last lesson (see Appendix T, Table T1) when he perceived that he might be allowed to leave. In fact, a term after the programme finished, when the final assessments were to be administered, his form teacher reported that he was anxiously asking when he was to attend. This should be compared

with his behaviour during the programme in 1999 when he always had to be collected from class (see Appendix T, Table T1).

During the programme, he had a repertoire of well-practised avoidance behaviours (see Appendix T, Table T1). These behaviours reduced the effective teaching time within each session dramatically. In the beginning, many different approaches were tried to find something that Tom might show some interest in reading. These approaches were totally unsuccessful until *Ludicrous Lies* was discovered. The very basic toilet humour in this book and the associated series appealed to Tom. Although these books were initially very difficult for him to read – they were written in an imaginative style and employed a wide vocabulary - he would read them in the lesson on a negotiated, turn about basis. Not surprisingly, Tom always negotiated to read the shorter paragraph but he began to read without creating a fuss.

During the programme, Tom, after an initial try, would frequently ask about a word or just read on despite his self-rated belief that he usually worked hard to decipher the difficult words (see Table 8.9). But in 1999, in the last two sessions of the programme, he showed a change in attitude. He still negotiated to read paragraph about, but he did not skip as many words.

Butkowski and Willows (cited in Stanovich, 1986) suggested that lowered persistence, part of the learned helplessness behaviour pattern, is self-defeating. "Children who give up easily in the face of difficulty may never spontaneously discover that they do possess the capacity to achieve outcomes that exceed their expectations" (p. 389).

The programme was successful in helping Tom to develop, first, more positive self-beliefs about his ability to read and, second, a knowledge about reading strategies which he associated with successful outcomes. Associated with these changes in beliefs were the beginnings of changes of behaviour from avoidance and very low persistence to increasingly positive self-efficacy judgements about his ability to read. These judgements enabled him to engage with more reading tasks and to display more persistence during each engagement.

For Tom, this programme was too short. In the year he increased his equivalent reading age by between six months and a year. This improvement and his perception that he was coping better with his reading in class were leading to a gradual shift in his self-beliefs about his ability to read the words and to comprehend his reading. He was also associating his improvement with the application of effort to apply appropriate strategies for deciphering difficult words and a decreased dependence on guessing the correct word. These changes in self-beliefs were, in turn, leading to the beginnings of

a breakdown of his avoidance behaviours, even to the extent that he was starting to show some interest in reading out of school (see Tables 8.6 and Appendix T, Table T1). Much more time was required for Tom to fully develop effective self-beliefs, knowledge and strategies to achieve the successes in his reading achievement that would make him an independent adult reader.

Tom's Language Profile

At the beginning of the programme, Tom's vocabulary score (percentile rank 20) lay in the low average range. By the end of the programme, his score lay in the high average range (percentile rank 70). This was a significant increase (see Table 8.11).

Two of Tom's CELF-3 (Semel, Wiig, & Secord, 1995) subtest scores (see Table 8.11) lay below the average range, the receptive language subtest Word Classes and the expressive language subtest Recalling Sentences. For the Word Classes subtest, his range of scores in the 90% confidence interval lay below the average range. Students with scores in the below average range are likely to have problems making predictions, creating meaning making inferences and using analogical reasoning for problem solving (Semel et al., 1995). Tom did sometimes use analogy to work out a word from words he had seen elsewhere.

His range of scores in the 90% confidence interval for the Recalling Sentences subtest did stretch into the average band (see Table 8.11). Tom omitted words, phrases and clauses; substituted words (children/students, turn up/show up). He gave ungrammatical substitutions (caught/catched, teached/taught, rain don't stop/rain doesn't stop); and added words (to go get/to get). Tom's score was lowered because his spoken language, New Zealand Maori vernacular, was not consistent with the language of the subtest. It is a recognised phenomenon that in such situations "the usage overrides what the teacher says" (Elizabeth Gordon, Linguistics Department, University of Canterbury, personal communication, 1998). Adjusting Tom's score for obvious examples (e.g. catched/caught, teached/taught, to go get) lifted his 1998 score into the bottom of the average range. His 1999 score remained below average. Even making allowances for his differences in usage, Tom's persistent omission of words and phrases indicated difficulties with short term memory for language which would have made it more difficult for him to remember the detail in text as he read.

Tom's score for the Formulating Sentences subtest (Semel et al., 1995) (see Table 8.11) was within the average range. In the administration before the programme, he could not use the conjunctions 'or' and 'however'. At the end of the programme, he could use both these words correctly but could not

use 'either' and 'otherwise' words that he had used correctly in the first administration. These results indicate that Tom's language use was very inconsistent. This inconsistency becomes even more apparent when Tom's 1998 and 1999 scores for Word Associations (Semel et al., 1995) are compared. His raw scores show that in 1998, when naming animals he gave one third more examples and when naming foods he gave twice as many examples. It appears he did not put the same effort into his answers in 1999. This subtest was administered last and Tom may have decided he had done enough for the day!

Table 8.11. Tom's standardised scores for the Peabody Picture Vocabulary Test - Revised (PPVT–R) and selected subtests from the Clinical Evaluation of Language Fundamentals - Third Edition (CELF–3).

	1998			1999		
	St. Score	PR	CI 90%	St Score	PR	CI 90%
Peabody Picture Vocabulary Test—Revised (PPVT–R)						
	87	20	81 - 95	108	70	101-115
Clinical Evaluation of Language Fundamentals—Third Edition (CELF–3)						
Subtests						
Word Classes	3	1	1 - 5	6	9	4 - 8
Formulated Sentences	8	25	6 - 10	9	37	7 - 11
Recalling Sentences	7	16	5 - 9	6	9	4 - 8
Word Associations	9	37	6 - 12	4	2	2 - 6
Rapid Automatic Naming	Errors 2/3 Equivalent Age = 13+years			Time 62/65 secs. Equivalent Age = 13+ years		

Note: St Score = standard score; mean standard score PPVT–R = 100; Mean standard score CELF–3 = 10; PR = percentile rank; secs. = seconds; CI = confidence interval.

Tom had been taught to read at school according to the Ministry of Education's (Department of Education, 1985) model of predicting words from meaning with minimal letter information and then confirming or self-correcting. His low average vocabulary score at the beginning of the programme along with his below average Word Classes scores suggest that he was likely to have been having difficulty predicting words from the meaning. That nearly half of his initial-letter miscues and seven eighths of his sounded miscues did not have meaning in their context adds support to this contention. It is hardly surprising that he often did not understand what he read (see Table 8.7) although his listening comprehension assessments indicated he had the ability to do so.

Tom's vocabulary scores indicated that he had made a significant gain in vocabulary during the programme. The meaningfulness of a word is said to increase with the number of exposures that are experienced (Elley & Croft, 1989). Therefore, the increased exposure to words in text, along with the active involvement of trying to recall words from letter information and text meaning, is likely to have had some effect on improving Tom's vocabulary.

Table 8.12. Tom's raw scores for the subtests of the Queensland University Inventory of Literacy (QUIL).

Queensland University Inventory of Literacy

Subtests	P/Sc	Raw Scores							
		1998				1999			
		15/6	27/8	5/11	23/11	23/2	22/4	27/7	19/10
Nonword Spelling	24	5	9	7		5	6	7	6
Nonword Reading	24	6	5	9		9	12	13	13
Syllable Identification	12	10	12	10				12	
Syllable Segmentation	12	9	12	12				12	
Spoken Rhyme	12	12	12	12				12	
Visual Rhyme									
Spoonerisms	20	9	16	16				15	
Phoneme Detection	12	7	9	8				10	
Phoneme Segmentation	12	5	6	7				7	
Phoneme Manipulation	10	7	5	7				8	

Note: P/Sc = possible score.

Tom could identify rhyme and became accurate at identifying and counting the number of syllables in a word (see Table 8.12). He also displayed some skills at identifying, counting and manipulating the phonemes in a word. During the programme, his ability to read non-words improved greatly indicating a developing knowledge about the letter information in words. He had some skills at nonword spelling at the beginning of the programme, which remained unchanged.

Two thirds of his initial-letter miscues were words with a similar appearance to the text word. This indicates that Tom was using incomplete letter information as his main cue for reading words especially those with one syllable. Tom had language difficulties which would have affected his word recall for reading. It seems that as his ability to use accurate letter information increased he

would gain more information from which to cue the correct text word. In fact, sometimes when he correctly sounded a word, Tom could hear what the word was as he sounded it out.

Stanovich (1991) wrote that deficits in phonological processing abilities have a causal relationship to difficulties with word recognition. Tom tested as having some difficulty with segmenting words into their phonemes. His test results showed that he usually had difficulty with the phonemes in consonant blends. He showed little improvement in phonemic awareness during the programme. When he was concentrating, he showed he had the ability to work rhythmically through the phonemes and syllables to decipher a word. In retrospect, it seems that continued instruction in phonemic awareness may have been beneficial. However, he did improve his non-word reading which indicated he was increasing his knowledge of letter information for reading words.

In summary, in addition to his difficulties with phoneme segmentation and non-word reading Tom had other language problems which are likely to have compounded his difficulties with word recognition. His below average scores for the Word Classes and Recalling Sentences subtests and initially Vocabulary indicated that Tom would have had difficulties in predicting the correct words from meaning as he read. Indeed, his results show that many of his miscues, both initial-letter miscues and sounded miscues, did not have meaning in their context. When questioned, Tom stated that he often did not understand what he read.

For Tom, attempting to decipher words was very difficult and what he read often did not make sense. It is little wonder that he believed that "reading's dumb" and developed so many avoidance behaviours.

Tom's Visual Difficulties

Tom had miscues throughout his strategy running record series that indicated that he had visual difficulties in accurately deciphering letter information. These difficulties included difficulties with letter inversions (w/m: so we/some), letter reversals (b/d: im-abe-ate/immediately, wabbed/waded, disgust/biscuit and similar p/q difficulties) and reversals of letter order (or/no, no/or, on/no, wist/wits, now/who).

Tom's Story

Tom entered the programme with very severe difficulties with word recognition. He had difficulty reading words of two or more syllables. His miscues frequently involved inaccuracies with one syllable high frequency words that he had read correctly on previous occasions, inaccuracies with letter groupings, incorrect tense, word endings and syntactical errors. He had attempted to sound over half of his miscues but only succeeded in finding a real word for one third of these attempts. Although two thirds of these sounded real word miscues had a similar appearance to the text word, only one third had contextual meaning. In attempting to decipher a further third of his miscues he had used the same initial-letter and a similar appearance to the text word but only half of these miscues had contextual meaning. He self-corrected frequently, usually when he perceived an inconsistency in meaning or syntax. He could read words he knew fairly fluently, but his reading speed was lowered by the number of words he had difficulty deciphering He frequently commented that he had difficulty comprehending what he was reading. This was despite his above the mean listening comprehension score.

At the beginning of the programme, Tom held optimistic to realistic beliefs about his ability to read text. He believed that he was average or below for silent reading, oral reading, and comprehension and at the bottom of his cohort for reading speed. In relation to the text he rated as easy-to-read, he said he knew the best ways to read difficult words, that he worked hard to decipher about half of them and guessed the other half. Despite his relatively positive stated beliefs about his ability, his self-efficacy judgements were not positive enough to enable him to read difficult text either in the lesson or independently at home. For Tom, reading was a task where he could not easily read the words, nor be confident that he had comprehended what he read. He externalised his failure by proclaiming, "reading's dumb", a statement which justified his extensive repertoire of avoidance behaviours.

Tom's family had previously arranged out-of-school tuition but he had refused to continue attending. From this tuition he had learned some basic letter-sound knowledge. As a result, at the beginning of the programme, he already understood the strategy for breaking a word up and sounding it through. He was fairly consistent in making an initial attempt to sound words of two or more syllables, but he was learned helpless and did not persist if his initial attempt was not successful. He said he preferred to ask or miss the word out. He knew to use contextual meaning to monitor his attempts at deciphering in order to detect miscues.

Initially Tom was inaccurate at breaking words into syllables, and his ability to detect, isolate and manipulate phonemes was incomplete. His non-word reading score showed that his letter-sound knowledge was weak. In addition, Tom had visual processing problems with letter orientation and difficulties integrating letter-sound knowledge with contextual meaning.

Tom's listening comprehension was above the mean for his age. When he began the programme, his vocabulary was low average. His low CELF-3, Word Classes subtest score indicated that Tom could have difficulty with creating meaning, making inferences and using contextual meaning to predict difficult words. His Recalling Sentences subtest showed he might experience difficulty with remembering parts of sentences and syntax. His Formulating Sentences subtest showed his difficulties with using conjunctions. These difficulties with language would have made it even more difficult for Tom to use the syntactic and contextual meaning cues proficiently for word recognition.

Tom entered the programme with a severe word recognition problem. His phonological processing difficulties, his lack of letter sound knowledge, his visual processing difficulties and his difficulties with integrating letter-sound information with conceptual meaning provide an explanation for his difficulties with word recognition. In addition, although his listening comprehension was above the mean for his age, he had language problems that would have made use of the syntactic and meaning cues difficult. These difficulties were reflected in the lack of contextual meaning in many of his miscues. The combination of word recognition and language difficulties made reading comprehension, as well as word recognition, difficult. He externalised his failure by saying it was not he that was dumb but reading. He was fairly consistent at making some initial attempt to sound a difficult word. But he was learned helpless. He did not persist with applying the strategies he knew if he was initially unsuccessful. He preferred to ask or miss difficult words out, two examples of his wide range of avoidance behaviours.

Tom learned to isolate and segment syllables during the course of the programme but his ability to segment and manipulate phonemes did not improve. However, his non-word reading showed a steady increase indicating that Tom was slowly acquiring letter-sound knowledge.

Apparently as a result of his increased exposure to text during the programme, Tom's vocabulary improved significantly from low average to high average. His Word Classes score also increased although not significantly. However, it appeared likely that the increases in these two scores might indicate that Tom would be able to use contextual meaning and syntax more readily to aid his word recognition skills.

During the course of the programme, Tom's beliefs about his reading ability dropped. He came to believe he was below average at reading and still believed he was at the bottom of his cohort for reading speed. Initially, his already extensive avoidance behaviours increased. He proclaimed he wished to leave the programme although, when at the end of 1998 he saw that he might be successful, he backed off and committed himself to another term. But, during the year, two factors acted to reduce this learned helpless pattern.

First, during the course of the lessons, after unsuccessfully trying many texts, Tom discovered *Ludicrous Lies* written by Paul Stafford. This book, with its very basic toilet humour and lively stories, appealed to Tom. He was also stimulated by the imaginative and sometimes inferential language that he had not previously experienced. He began to perceive that reading could be interesting. He began to develop intrinsic motivation for reading these short stories. As a consequence, he reduced his avoidance behaviours. At each session he read these stories without fuss although he still demanded to alternate the reading of paragraphs with the teacher.

Second, Tom changed his beliefs about his ability to read. At the beginning of 1999 his self-ratings about his reading ability were more negative. But Tom was now comparing his ability with that of his new mainstream classmates rather than with his previous special needs classmates. From the beginning of 1999, Tom stated that he thought his reading was improving. However, his perception of this improvement was not apparent in his ability ratings, made in relation to his mainstream classmates until a term after the programme had finished. By this time, Tom was also volunteering that he could now read in class.

Tom changed his beliefs about his reading behaviours as a result of the programme teaching. By the end of the programme, even for text he rated as hard to read, he believed that he usually knew the best ways to read the difficult words, that he usually worked hard to decipher them and did not guess. These beliefs reflected his belief that sounding was an effective strategy. He stated that he attributed his improving skills to sounding out the vowel sounds and especially the two letter vowel sounds.

Despite the fact that Tom stated that he believed that his reading was improving from the beginning of 1999, he did not change his avoidance behaviours associated with his sounding strategy use until the final teaching sessions of the programme. A term after the programme finished, Tom's ability self-ratings and statements showed that he perceived his improvements in reading as a result of his classroom experiences. It seems very likely therefore that Tom was already becoming aware of his improvements through his classroom experiences at the end of the programme. It seems that, although he believed his reading was improving from the beginning of 1999, he only began to change

his avoidance behaviours in June when these improvements were confirmed by his classroom experiences.

In the final lessons, as a result of his beliefs resulting from his classroom experiences that his reading ability had improved, his new-found belief in the value of reading and his belief in the effectiveness of the sounding strategy, he showed a change his reading behaviours. He further reduced his avoidance behaviours. He became more persistent with his strategy use. In his assessment at the end of the programme, he showed flexibility and changed his sounding strategies when he was initially unsuccessful. He was making a beginning at adopting the behaviours of a mastery orientated learner.

Tom's Neale scores showed steady progress with a gain of a year during the course of the programme as a result of his improving letter-sound knowledge and language. This was not accelerated progress but, if this progress is compared with his total progress during his years of schooling, it can be seen that the programme was successful in increasing Tom's word recognition ability. In comparison, his Burt score for words in isolation showed only a six-month gain, an indication that Tom did use the story line to help with word-recognition. Unfortunately, his changed persistence in strategy use at the end of the programme came too late to be reflected in a gain in the rate of achievement for these tests.

Tom's fluency running record scores for reading age equivalent 10-12 year journal text showed an increase in accuracy during the year and a decrease in variability in 1999. Journal text has a greater number of one and two syllable words and fairly rich contextual meaning. His improvement in reading accuracy reflected both Tom's improving letter-sound knowledge and his improving language ability, both necessities for good word recognition. That his strategy running record scores for reading age equivalent 11-13 year text showed no overall change was an indication of the level to which Tom's abilities had improved. It also showed the level of improvement still necessary in order that he might have the proficiency necessary for full participation in his classroom programmes.

To summarise, by the end of the programme, Tom's non-word reading scores showed that he had increased his letter-sound knowledge although it still remained an area of difficulty. He continued to show difficulty with phonological processing until the end of the programme. In addition, he had increased his knowledge of vocabulary and his language ability. This increase would have helped both his reading comprehension and his use of the syntactic and contextual meaning cues for word recognition.

Tom was learned helpless when he entered the programme He externalised his failure by proclaiming that it was the task and not him that was dumb. This allowed him to justify his extensive repertoire of avoidance behaviours. When text was found that he found interesting and humorous, he reduced his avoidance behaviours.

By the end of the programme, Tom perceived through his classroom experiences that he was making progress. He began to develop a perception that reading could be a task of value. He attributed this progress to his use of letter-sound knowledge and the sounding strategy. As a result of these changing beliefs about his reading ability and the value of the task, he reduced his avoidance behaviours. During the final lessons of the programme he became more persistent with his use of the sounding strategy with difficult words. In the assessment at the end of the programme, he demonstrated that he was capable of being flexible with its application and could change his sounding strategies if his first deciphering attempt was not successful.

Unfortunately, there was insufficient time for Tom's changing reading behaviours to be reflected in an increase in the rate of gain in achievement in his Neale and Burt scores. But as a result of his increased letter-sound knowledge and language ability, his Neale scores did show a steady increase of one age equivalent year in the year of the programme. His Burt score gains, for which he was unable to use the story line to help word recognition, were more disappointing at six age equivalent months. The effect of his increased letter-sound knowledge and language abilities were also evident in the reduced variability and increased reading accuracy of his fluency running record scores.

A yearlong programme was too short for Tom. For a programme to be effective, he required, first the time to perceive the slow gains in his reading achievement in class; time for these gains to effect changes in his self-beliefs about reading; time for his changed self-beliefs to effect changes in his avoidance and reading behaviours; and, finally, time for his changed reading behaviours to effect the gains in reading achievement that were necessary for him to become a fluent reader.

CHAPTER 9

Case Study 6: David

At the beginning of the programme, David was a fifteen-year-old, Year Ten adolescent. His Neale Form 1 (1988) equivalent age score for reading accuracy was 8.1 years. His informal listening comprehension score using the Neale texts was 12.9+ years with a raw-score/test-ceiling-raw-score ratio of 41/33. He had an age percentile rank of 83 for the Progressive Achievement Test of Listening Comprehension (1994). Comparison of David's reading accuracy score with his two listening comprehension scores showed that David fulfilled the criteria for a reading disability because his extremely poor word recognition prevented him from achieving his likely reading comprehension potential.

Both parents were very interested in education. His Father was retired but had been an education officer. His Mother had an administration position and was self-employed teaching computer skills. Both parents felt frustrated because David would no longer allow them to help him with his reading but preferred to lock himself up in his room to work on his own.

David had had renal failure as a pre-schooler. His parents believed that David was "mentally impaired" from this episode and that this mental impairment affected both his school progress and his social skills, although they said his doctors would not confirm this.

David's parents volunteered that David had been diagnosed as having Attention Deficit Disorder. He had attended a special unit for physically and mentally handicapped children from 4 – 6 years of age. His parents felt he "fitted in" there but he was mainstreamed at six because "he was too intelligent" and his behaviour had regressed as he began to copy the other children.

David had special dispensation for remedial reading at school. This was discontinued when he was nine years old as his teacher felt he had become dependent on it. He then received tuition, 0.5 hours twice a week, from a SPELD tutor for several years. This tuition was discontinued when he entered the special unit at high school as it was again thought that David had become dependent on tuition. In addition, the tutor thought that she had taught him what she could. His parents said that he was now receiving considerable extra help in the special needs unit at school. He qualified for teacher aide hours.

At different times, in addition to his reading tuition, David received tuition for movement, art and some alternative medicinal treatments. During the time of the programme, he was enjoying out-of-school drama lessons.

Both parents were of the opinion that David was unable to work independently. They said that he responded to one-on-one tuition as he could be directed but that he was not spontaneous: he didn't initiate; only responded. But, during the programme it was observed that David, after exhibiting a high degree of inaccuracies when reading blends and phonograms in a lesson, would come to the next lesson able to read them nearly accurately. He had practised them independently at home, by himself, and on his own initiative. His Father was told of this progress but remained unconvinced that David could work independently.

David's hobby was following Star Trek magazines. He was very, very frustrated that he was unable to read these and his one ambition was to become a proficient reader. This, the teasing he endured at school and probably the parental attitudes detailed above led, to a great deal of tension. His tears in his first interview for the programme appeared to be a tangible result of this frustration and tension. Sometimes his ability to work constructively in the programme lessons was impaired for several consecutive lessons.

David's Reading Programme

David had extreme difficulties blending letter-sound information to form words. His teaching programme emphasised the teaching of letter groups such as consonant blends and phonograms (Wylie & Durell, 1970) in order to reduce these. Further, David found it difficult to blend consonant blends and phonograms. He was given cards with the blends and phonograms written on them. It was explained to David that, although a blend together with any given phonogram may not make a real word, it was likely to make a syllable within a word. He was encouraged to lay out a column of cards of phonograms and then to choose a consonant blend card. He was then shown how to work down the column of phonograms making words or syllables with the consonant blend. When his accuracy had improved with this task, he was encouraged to alternate the use of two consonant blends as he worked down the column of phonograms. David practised these tasks independently at home and had often improved markedly in his performance in his following lesson.

In the second six weeks of the programme, and again in the third and fourth terms, David was taught the programme strategies for applying his letter-sound knowledge. He was also taught an extensive

range of strategies to help him to eliminate resounding words and rereading groups of words and sentences. His individual strategies included;

- trying to read letter-groups, the consonant blends and phonograms he was being taught, and whole words;
- not resounding until after he had sounded the whole word;
- not rereading groups of words until he had read the whole sentence; and
- slowing his pace of reading sufficiently so that he could maintain an even reading pace as he worked to integrate the meaning and letter information while he read.

David believed that he had a lot of difficulty deciphering words but that, if he worked persistently at trying to sound them through and at trying to predict them from meaning, he would eventually be able to read them. From weeks 13 to 16 and throughout 1999, his programme focused on teaching him that he had the ability to read the words if he used letter group information rather than individual letter information. It discouraged him from overusing his resounding and rereading strategies. He was encouraged to believe that, if he used his new strategies, he would have control over his progress in reading achievement.

David's Reading Profile

Standardised Assessments

David's Neale scores showed approximately 1.5 years progress by the twenty fourth week of the programme (see Figure 9. 1). His scores also showed one down turn of six months in the sixth week of the programme and a second downturn of a year between his week 24 score and his week 34 score. Both these downturns in reading accuracy scores were associated with periods when David exhibited substantial tension during his lessons (see Table 9. 1).

In May, before the beginning of the programme, David miscued some small words (she/his, the/his, from/for) and did not attempt many words (sheltered, shoulder, travellers). By the second assessment in September, many of his miscues had the same initial letter as the text word. Some of his miscues made sense within the sentence (finished/final) and some didn't (without/waiting). He did not attempt other words (circus, enabled); sometimes gave an incorrect word ending (acting/act) and had continual difficulty with the names of characters in the text (Jan/Jane, Paul/Peter).

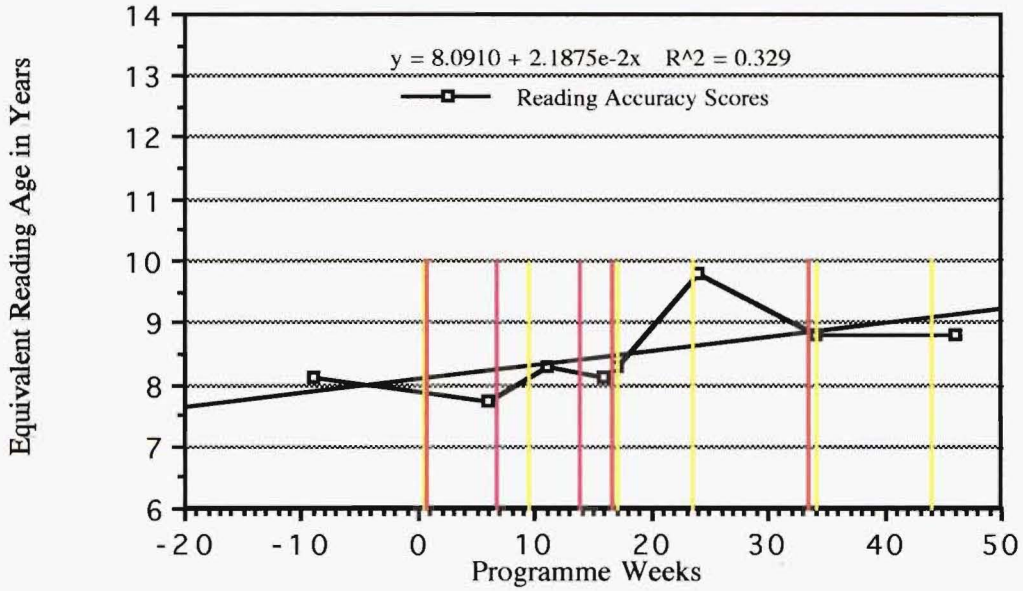

Figure 9.1. David's Neale Reading Accuracy age equivalent scores.

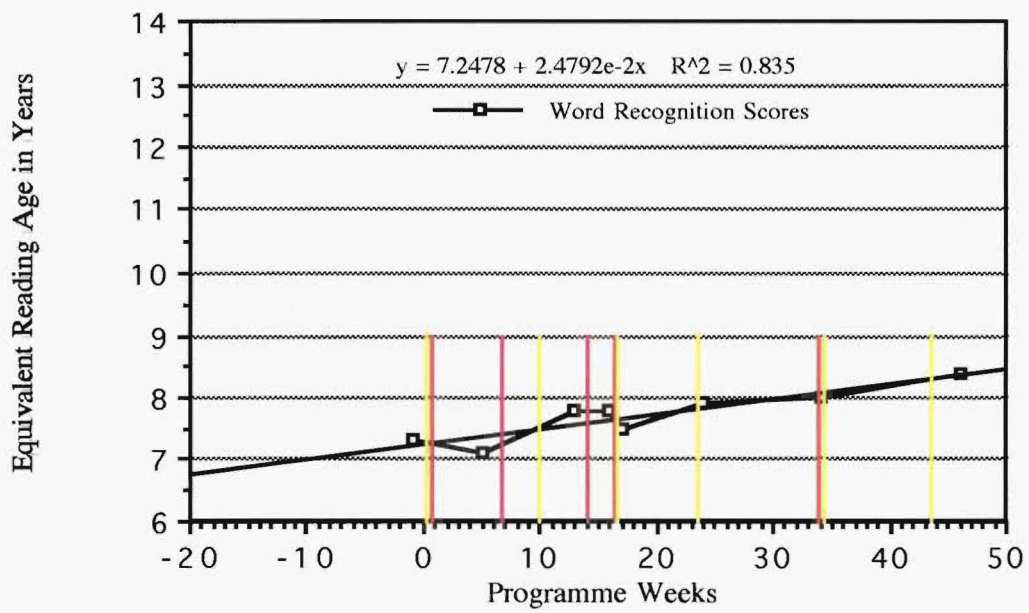

Figure 9.2. David's Burt Word Reading age equivalent scores.

His week 24 miscues included words that he had continued to have difficulty with (finished/final); words he did not attempt (guided, dreaded); and words with the same initial sound and meaning in the sentence (ferociously/furiously, desperate/despairing). However, he had increased his self-corrections (knew/now, waiting/watching/waiting, became/decided). In week 34, at the end of the programme, David miscued some words that he had read correctly in his first assessment in May 1998. These miscues often had the same initial letter as the text word and meaning in the sentence (him/her, collided/crashed, switch/spring). He also self-corrected fewer miscues than he had in his week 24 assessment. It was evident he was integrating the meaning cue with letter information but the letter information he used was inaccurate and insufficient.

Table 9.1. David's episodes of severe tension.

24.6.98	Tears during the first interview
25.6.98	Visibly upset during the discussion of which strategies he used to read. Discussed with the school teacher in charge who, after a talk with David, recommended counseling. David said that he was sick of being hassled by the other kids.
1.9.98	David was observed on the stairs at school between classes a week before looking very upset. Very tense during Neale reading assessment. Looked as though he was close to tears at the end and went to the toilets afterwards.
3.9.98	David was much more relaxed today. He attributed this to having convinced his Physical Education teacher that he didn't need to participate in the first half of the lesson before he came for reading in the second half.
25.2.99	Very tense. In discussion it emerged that David had been unable to keep up with copying notes from the board in History. He was very anxious. David was encouraged to see that, if he was anxious, he had more difficulty with his reading, This in turn made him even more anxious and his reading problems increased again. David laughed which reduced his tension and his reading improved.
8.3.99	Very Tense. Tension was noticeably reducing David's ability to participate in the lesson. Reading Unit teacher was to investigate the cause.
11.3.99	Not so tense today.
15.3.99	David was being teased. The pupil responsible had since been suspended. David and his family were thinking of correspondence school at home.
4.5.99	Tension again a problem. No explanation.
6.5.99	More relaxed today.
17.6.99	Very tense again. Appeared to be because the programme was finishing and David is still having great difficulties with his reading. He has been to the Guidance Counselor to discuss what is to happen about his tuition now. It was suggested that, in view of the extensive tuition David has received and his tension, some time out might be of value. David appeared relieved at this suggestion. It was further suggested he re-read very easy books three or four times, David appeared to be comfortable with this suggestion.

David's Burt Word Recognition scores showed more systematic progress (see Figure 9. 2). One year of progress was recorded during the programme year. In July 1998, at the beginning of the programme, David confused many one syllable words (for/of, soon/some, put/pot and sad/said). He could read a few words of more than one syllable (village, quickly, beware). At week 24, he still confused some one syllable words (for/of, am/an, said/sad), he could recognise more two syllable words and even a four syllable word (emergency). By week 46, a term after the programme finished, David confused only one, one syllable word (say/said/sad) and had made progress in recognising more multisyllabic words.

David's scores for the recognition of words in isolation were lower, and often substantially lower, than his Neale scores. At week 17, there was nearly a year's difference and, at week 24, the difference was two years. Both sets of scores show the difficulties that David experienced with word recognition. The difference between his Burt scores which measured word recognition for words in isolation, and his Neale scores, where some help was available from context, indicated that David was using the meaning cue.

At week 46, a term after the completion of the programme, the difference between his Burt and Neale scores was only four months. The closing of the gap between the two sets of scores at the end of the programme was achieved by a steady increase in David's score for recognising words in isolation accompanied by the decrease in his Neale scores, which has already been described. When David experienced periods of tension, it seems that his ability to integrate meaning with accurate letter information decreased in this assessment. He miscued more often and his reading accuracy score approached his score for recognising words in isolation.

David's reading speeds were very, very slow (see Table 9.2). His Neale scores usually did not achieve the 30-words/minute necessary for conversion to a standardised age equivalent score using the Neale (Neale, 1988) conversion Tables. Such low reading speeds attest to the difficulty David experienced in achieving automaticity with letter-sound information.

The progress David made when reading words in text, where meaning was not easily accessible as a cue for word recognition, was very variable. It appeared to be influenced by the amount of tension that David was experiencing. The programme did enable David to make some hard won progress in recognising words in isolation, one year in a year. Perhaps, however, this progress should be considered in terms of the amount of progress David had made in his ten years of school and private reading programmes; two age-equivalent years. It can then be seen that the programme had been very successful. It had improved his word recognition for words in isolation by 50%!

Table 9.2. David's reading speed over three or four Neale texts.

Progr. Wk No.	Reading Speed w/min 3 pass.	Reading Speed Equ. Age 3 pass	Reading Speed w/min 4 pass	Reading Speed Equ. Age 4 pass.
-9	29	< 6 years		
6	18	< 6 years	15 (Form 2)	< 6 years
11	29.3	< 6 years		
16	29.2	< 6 years	22 (Form 2)	< 6 years
17	34	6.4 years		
24	37	6.7 years	26.9 (Form 2)	< 6 years
34	31	6.1 years		
46	23	< 6 years	22.3 (Form 2)	< 6 years

Note: Progr = programme; Wk = week; No. = number; w/min = words per minute; 3 pass. or 4 pass = the first three or four Neale passages respectively; Equ. Age = equivalent age; Form 2 = the Form 2 series of Neale graded texts.

Weekly Fluency Running Record Assessments

School journal text graded at an 8-9 year age equivalent reading level was used for David's fluency running record assessments. This level of text was a compromise between a suitable deciphering difficulty level for David and suitable subject matter. This text, although initially very difficult for David, was the easiest text in which the subject matter and pictures were not obviously too young for David in terms of his intellectual abilities. Most of his self-corrected percentage accuracy scores in this record lay between 89% and 97% (see Figure 9.3). This range of scores spans Clay's (1985) instructional level and extends into her independent reading level.

There were two periods when there was a downturn in the accuracy scores (see Figure 9.3). The first was during weeks three to six when the scores were lowered to between 80% and 83%. The types of miscues made in these weeks appear similar to those made in subsequent weeks, that is, words of similar appearance to the text word and word endings. There were just a greater number.

In weeks 31 and 32, the second episode of a downturn in scores, there seemed to be a greater number of miscues involving short, frequently used words (the/a, and/a, men/man, her/his, and/of). Both periods of downturn were associated with periods when David was observed to be noticeably tense, either during the lessons or around the school (see Table 9.1). It seems that tension may have reduced David's accuracy in word recognition. His Neale scores were also lowered at these times.

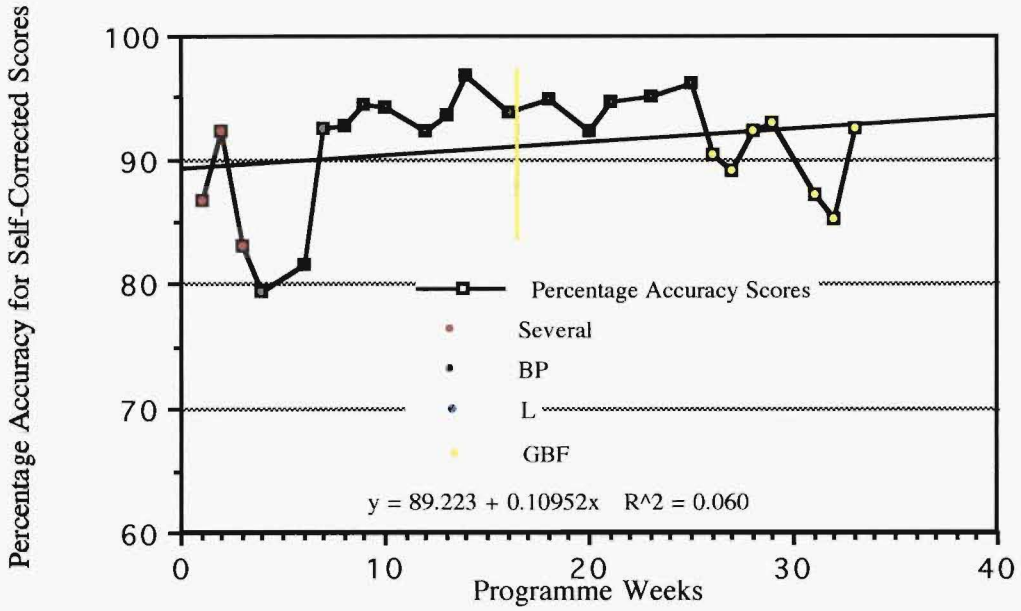

Figure 9.3. David's weekly self-corrected percentage accuracy scores for the fluency running record series.

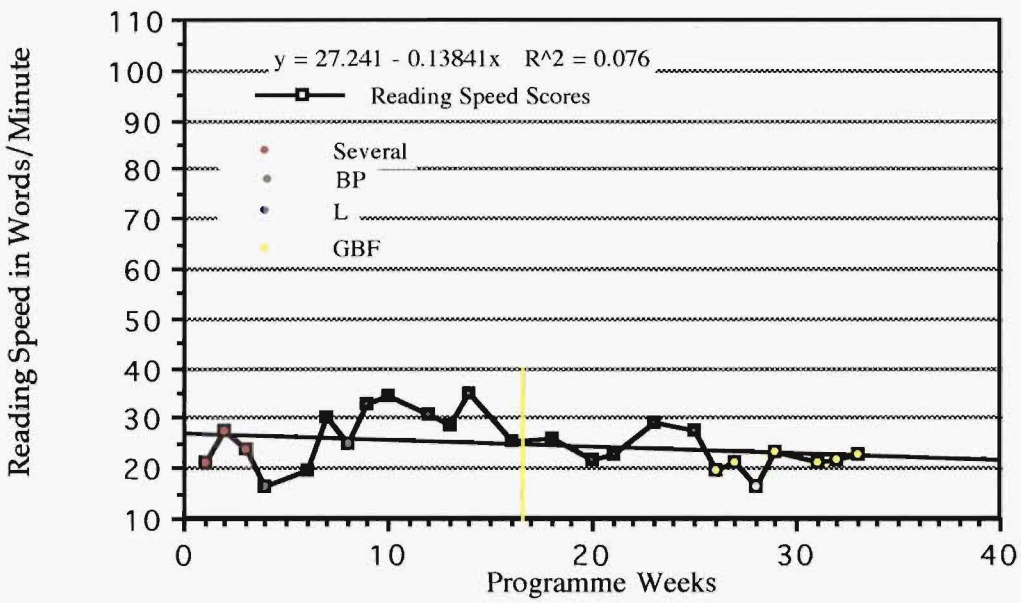

Figure 9.4 David's weekly reading speed scores for the fluency running record series.

The results suggest that the programme did not have any systematic effect on David's fluency percentage accuracy scores. The regression line for the percentage accuracy scores shows an overall increase of 3%. However, the mean percentage accuracies for 1998 and 1999 differ by only approximately 1.5% (see Table 9.3). If the scores from the two periods of downturn, discussed above, are deleted, then this difference shrinks to less than 0.5 percent.

David's reading speed was extremely slow with a range of between 17 and 35 words/minute (see Figure 9.4). These reading speeds show the same range as those obtained for the Neale readings. Again, the extreme difficulty that David had with fluency was indicative of his very severe difficulty with automaticity for letter-sound information.

Table 9. 3. David's mean percentage accuracy scores and reading speeds for the weekly fluency and strategy running record series.

Assessment Name	Programme Week Numbers.	Mean %
Fluency RR % Acc Graph '98-'99	1-33	91.0
Fluency RR % Acc Graph 1998	1-16	90.3
Fluency RR % Acc Graph 1999	17-33	91.9
Fluency RR % Acc without Weeks 3,4 & 5, 1998	1-16	92.9
Fluency RR % Acc without Weeks 32 & 33 1999	17-33	93.0
Fluency RR Fluency Graph '98-'99	1-33	25 w/min, <6 years
Strategy RR % Acc Uncorrected	1-33	79.9
Strategy RR % Acc Uncorrected	1-18	79.7
Strategy RR % Acc Uncorrected	20-31	80.8
% Acc. Str. RR Self-Corrected	1-33	93.4
	1-18	92.2
	17-31	94.7

Note: % Acc. = % Accuracy; Uncorrected = % accuracy when all stumbles and miscues are counted before self-correction; Self-Corrected = % accuracy after self-correction; RR = running record; w/m = words per minute; years = age equivalent years.

Nor did the programme have any systematic effect on David's reading speed. The regression line for the reading speed scores shows a decrease of three words/minute at the finish of the programme. This was not a change of any consequence.

Examples of Miscues

Several groups of miscues were examined. These groups included pronouns, tense, two words contracted together and the similar word group of/from/for/form.

- Appendix U, Table U1 lists David's pronoun miscues and Appendix U, Table U1a gives examples of some of them in their context. It can be seen that David usually predicted the pronouns from the meaning in the preceding portion of the sentence. Examples 27d, e, and f (from Appendix U, Table U1a) are of interest as David consistently miscued with a pronoun of the wrong gender, which he then self-corrected, after initially having the gender correct (see example 27c). Perhaps this was an indication that he had difficulty processing the meaning of the passage and deciphering the letter information in words concurrently as he read the words.

- David miscued the tense of the verb (see Appendix U, Table U2), sometimes giving the present tense instead of the past tense and sometimes giving the past tense instead of the present. In other examples, David did not read the word ending accurately and miscued with the participle instead of the present or past tense (see examples for weeks 6, 7, 12, 16, 29, 32 and 33). These miscues involving tense are given in their context in Appendix U, Table U2a. Again, most of the miscues were predicted from the context of the preceding portion of the sentence.

  Of interest is David's initial syntactic miscue 'keeped/kept', a very immature miscue for a fifteen-year-old student to make. It seems likely that David sounded the letters to obtain 'keeped' and then used his syntactic knowledge to self-correct. This miscue also gives an indication that David was having difficulty deciphering words from letter information and using his language knowledge concurrently.

- Contractions of two words were often miscued (see Appendix U Table U3). Sometimes the negative contraction was not deciphered (could/couldn't, see week 1) and sometimes the negative contraction was given incorrectly (couldn't/could see week 18). Often these miscues began with the same letter as the text word and looked very similar. In fact, sometimes a contraction was given for an entirely different but similar looking word (did/didn't/doubt see week 8).

  Usually the miscue was predicted from the preceding text (see Appendix U, Table U3a). Example 28b illustrates the difficulties that David had deciphering letter information. From the examples listed, it appears that an inconsistency in the meaning or syntax would prompt David to self correct. (see Appendix U, Table U3a examples 18b; & 28c).

- There were five examples of confusion with the similar words of/for/from/form (see Appendix U Tables U4 and U4a). It can be seen that all the examples were predicted from the meaning in the

preceding context. David also self-corrected four of the five examples when the meaning became inconsistent with the context provided by the rest of the sentence.

This series of fluency running records were read under pressure from the clock. It can be seen from these groups of miscues that David predicted words he was reading from the previous context within the sentence. He then often self-corrected when the meaning of the sentence was subsequently lost or the syntax of the sentence was inconsistent, indicating the presence of a miscue. The miscues, involving the gender of the dog and the miscue 'keeped/kept', all subsequently self-corrected, suggested that he may have had trouble deciphering the words and comprehending the sentence simultaneously.

Many of the miscues David made were of similar appearance to the text word, often with the same initial letter. That is, he used very inaccurate and very incomplete letter information when he read. In addition, his reading speed was very, very slow. Both these characteristics of David's reading indicate that he had great difficulty developing automaticity for the letter-sound information in words.

Weekly Strategy Running Record Assessments

David read school journal text graded at a 9-10 year level for the strategy running record. As with the difficulty level of the journal text used in the fluency running record series, this text was a compromise between the deciphering difficulty level and the appropriateness of the content for David in terms of his intellectual abilities. The regression line for weeks 1-18 (see Figure 9.5) shows an increase in David's uncorrected percentage accuracy scores from 71% to 87%, an impressive increase of more than 15%, by week 18. The regression coefficient indicates that the variance in the scores had a high systematic relationship with the programme. This increase showed a dramatic increase in his ability to correctly identify words as he read.

Unfortunately, weeks 19 and 20 were associated with a substantial drop in this developing proficiency and David's substantial rate of progress up until week 18 was not recovered in the subsequent programme weeks (see Figure 9.5). The drop in percentage accuracy scores between the weeks 1-18 regression line at week 18 and the 1999 regression line at week 20 is 10%. The 1999 regression line shows an increase in the scores of approximately 4.5% between weeks 20 and 31 and has a value of 82% by week 31. This is 5% lower than the value of the weeks 1-18 regression line at week 18. David's scores in weeks 17 and 18 were particularly high and were not achieved again.

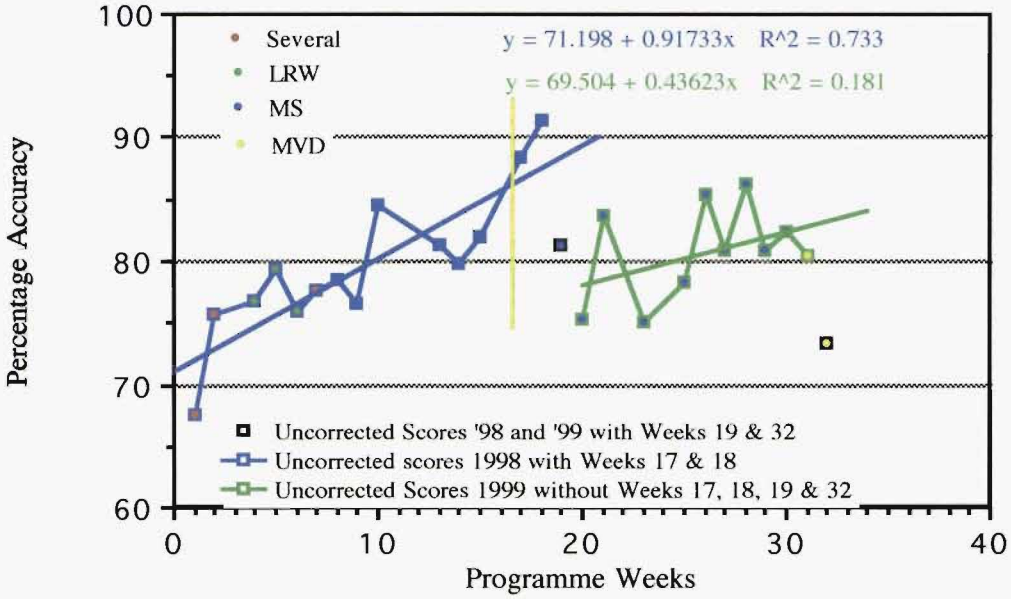

Figure 9.5. David's uncorrected weekly percentage accuracy scores for the strategy running record series.

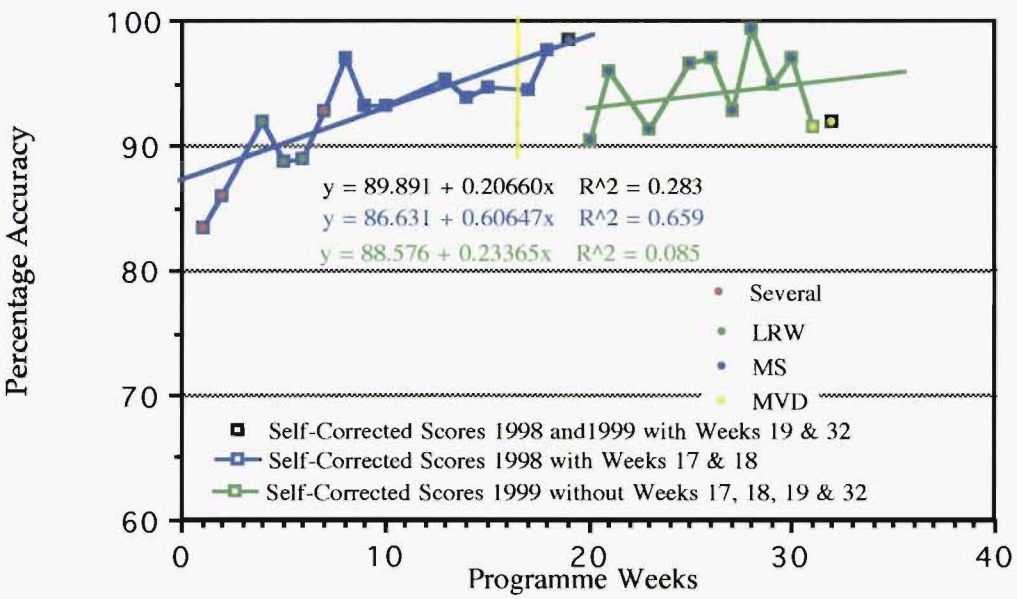

Figure 9.6. David's weekly self-corrected percentage accuracy scores for the strategy running record series.

It can be seen that David greatly improved his ability to read words in text graded at a 9-10 year level accurately without recourse to self-correction during the first 18 weeks of the programme. Apart from one score, these uncorrected scores were all situated in the hard text category. However, this progress was interrupted at the beginning of 1999, apparently as a result of the tension David experienced as a result of being mainstreamed, of being enrolled in a School Certificate History class and of being subject to victimisation from one of his new classmates.

Figure 9.6 graphs David's self-corrected strategy scores. Self-correction lifted David's mean percentage accuracy score for the programme by 13%. During the first six weeks of the programme, all but one of David's scores lay within Clay's (1985) hard text difficulty level range. All David's subsequent self-corrected scores lay within Clay's instructional or easy text level.

The self-corrected scores for weeks 20-32 were more variable than were the scores for weeks 7-18 and the green regression line was consequently lowered in comparison to weeks 8-18 of the red regression line. However, only three of the weeks 1-18, 1998-99 scores lay in Clay's (1985) easy text range. In comparison, over half of the weeks 20-32, 1999 scores were within this range.

Although most of the self-corrected scores lay within Clay's (1985) instructional and easy text level, these were not the instructional and easy text levels of the normally developing reader. Self-correction had lifted the scores by 10% to 20%. Text for which the reader self-corrects to this extent is very difficult for the reader.

When the regression line for the complete set of scores for the self-corrected fluency percentage accuracy scores is compared with that of the self-corrected strategy percentage accuracy scores, it can be seen that both series began with similar scores. For the fluency series, where David read under the pressure of the clock, one-sixth of the scores lay in the easy text range of 95-100%. For the strategy series, where strategies to apply letter-sound information were emphasised, one-third of the scores were in the easy text range. That is, where strategies rather than time was emphasised, David obtained twice as many self-corrected scores in the easy text range, even though the text was at a harder level. These results indicate that the strategies that were taught to David in the programme were effective.

Strategy Use for Word Recognition

Relative Proportional Use of Each Strategy

David's mean percentage weekly use for deciphering miscues for each strategy category score and the range for each weekly strategy category are presented in Table 9.4. The raw data for the mean number of weekly miscues in each strategy category is presented so that the effect of the small sample sizes can be appreciated.

Table 9.4. The strategies David used for deciphering his miscues.

	∑ Str. Misc.	Sounding	Initial-Letter	Meaning	Similar Word	Inventing	Pause or Ask
Mean 98-99 (Raw Data)	26.3	14.2	7.5	2.4	1.1	0.2	0.7
Mean % 98-99		53.8	28.4	9.2	4.0		3.6
Range in %		28 - 70	17 - 46	0 – 18	0 – 9.3		0–11.1

Note: The values in this table supplement the raw data chronicled in Figures 9. 7 – 10.11. ∑ = sum of, Str. = strategies, Misc. = miscues.

David used the sounding strategy nearly twice as often as any other strategy. His mean percentage weekly use for this strategy running record series was over 50% (see Table 9.4). The variation in his percentage weekly use between consecutive running records was high, often ranging between 10% and 30%. This variation is also apparent in the range in percentage use in Table 9.4.

There was no overall change in David's percentage weekly use during the programme (see Figure 9.7). Although the regression line shows an increase of 6%, this percentage is less than the percentage difference between most consecutive running records and cannot be considered to be significant.

The second strategy that David made most use of was the initial-letter strategy (see Table 9.4). Again, his use of this strategy was variable from record to record but with a usual variation of around 10% between the weekly records. The variation was less than that for the sounding strategy.

There was no overall change in David's overall percentage weekly use associated with the programme (see Figure 9.8). The regression line shows a small decrease in percentage use of

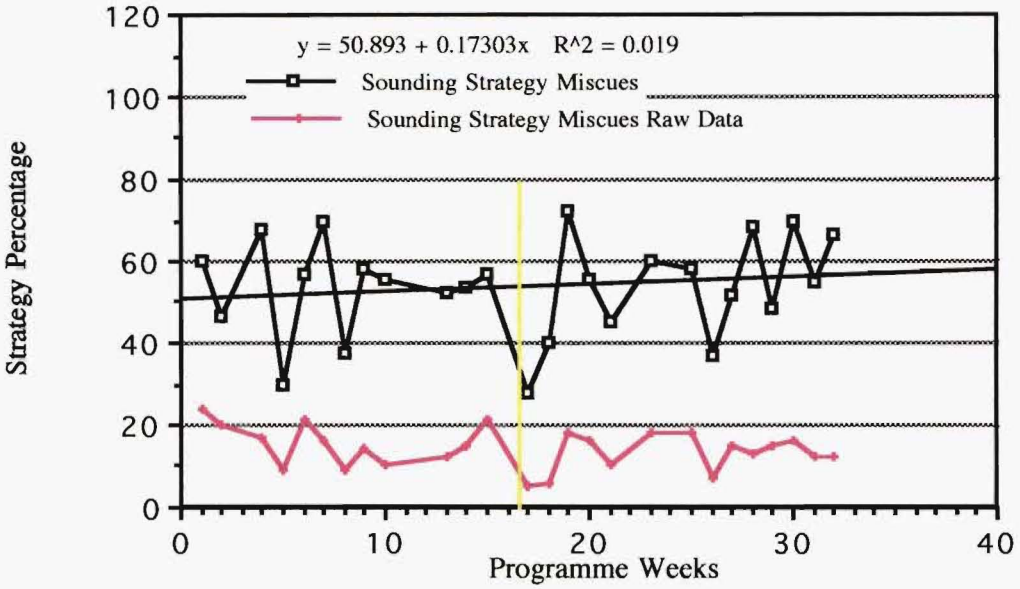

Figure 9.7. David's weekly percentage use of the sounding strategy in the strategy running record series.

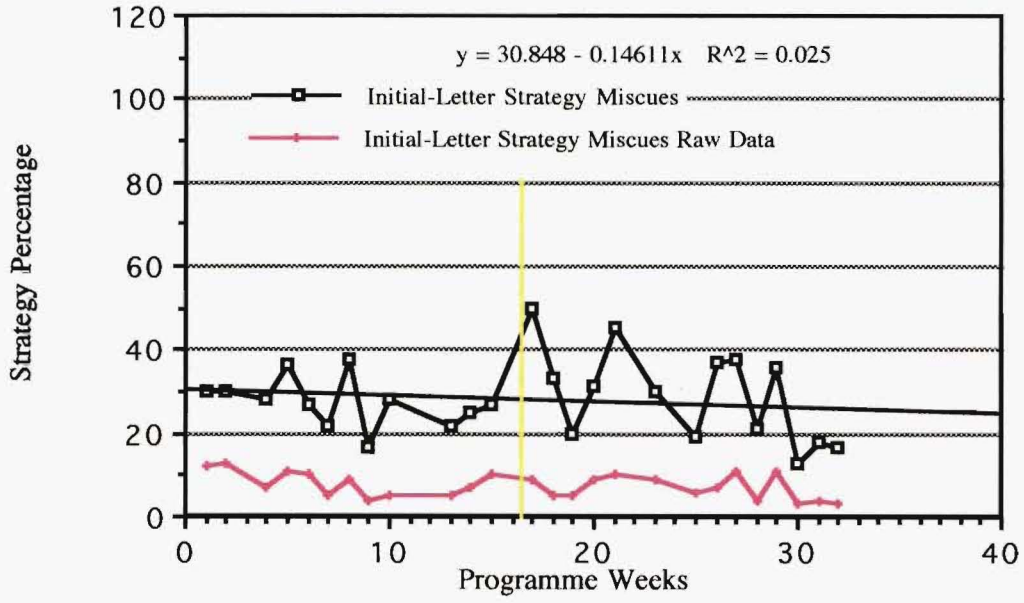

Figure 9.8. David's weekly percentage use of the initial-letter strategy in the strategy running record series.

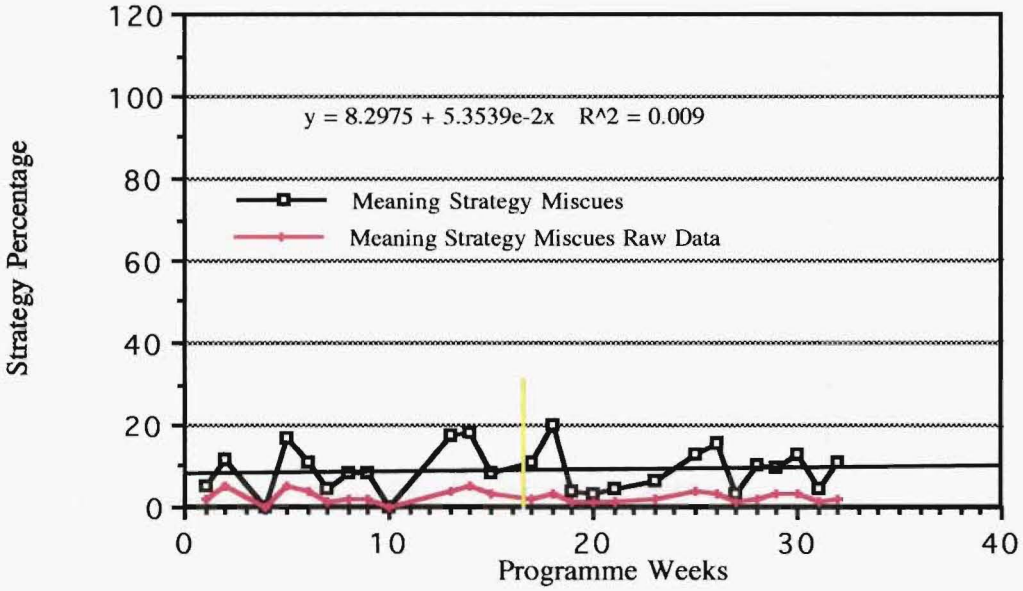

Figure 9.9. David's weekly percentage use of the meaning strategy in the strategy running record series.

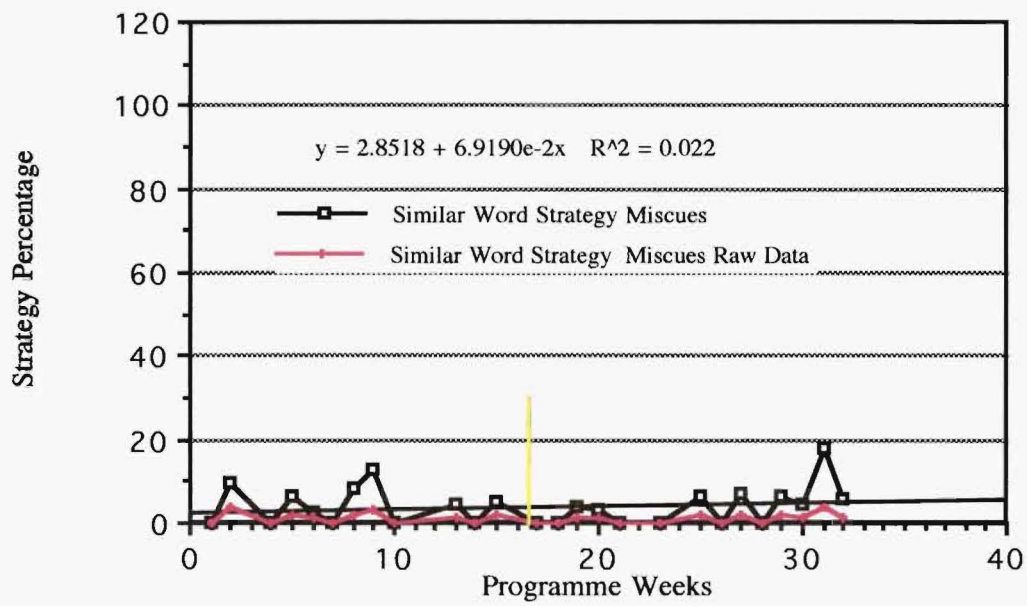

Figure 9.10. David's weekly percentage use of the similar word strategy in the strategy running record series.

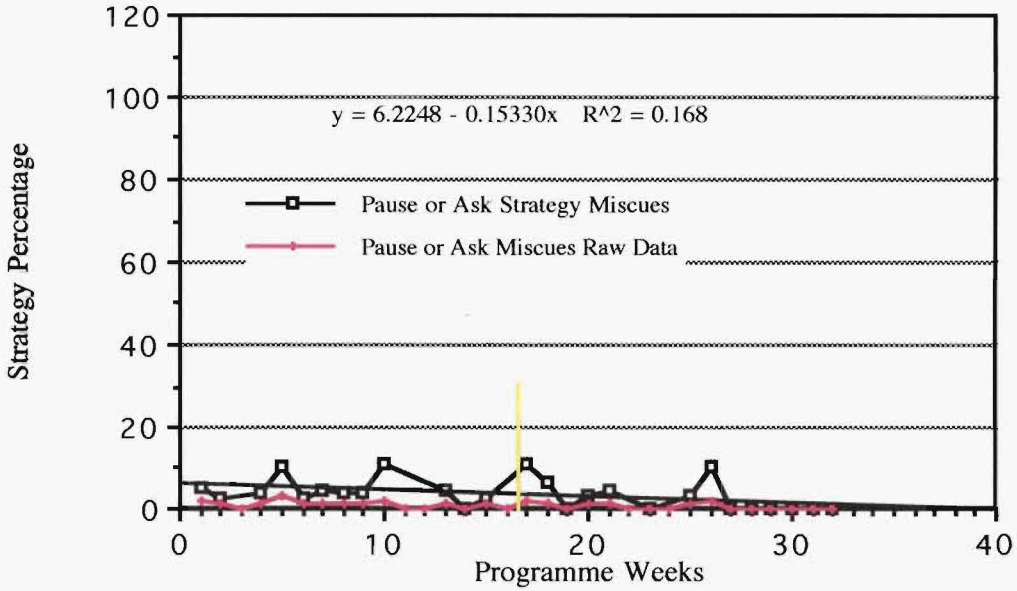

Figure 9.11. David's weekly percentage use of his pause or ask strategy in the strategy running record series.

approximately 5%. As this percentage decrease is less than the usual variation between consecutive records, it cannot be considered significant.

The sounding and initial-letter strategies were the strategies that David used for over 80% of the words he found difficult to decipher (see Table 9.4). In addition, he made small but consistent use of the meaning strategy (s Figure 9.9) and some use of the similar-word strategy (see Figure 9.10). Sometimes he waited or asked for assistance (see Figure 9.11). There was no significant overall change in his pattern of use for these three strategies during the programme.

To summarise, David had used the sounding and initial-letter strategies for over 80% of his miscues in the strategies running record series. He used the sounding strategy nearly twice as often as the initial-letter strategy and made infrequent use of the meaning and similar word strategies. Occasionally he waited or asked for assistance. The programme did not effect any significant change in David's percentage use of these strategies.

Self-Correction Behaviours for Each Strategy

David improved his ability to self-correct his miscues for the sounding and initial-letter strategies during the programme (see Figures 9.12, 10.13). The 1999 mean for the percentage of sounding strategy miscues that were self-corrected was 20% higher than the mean for 1998 (see Table 9.5). The regression line (see Figure 9.12) showed an increase of nearly 40% by the thirtieth week of the programme and the regression coefficient indicates that the improvement in David's self-correction behaviour was very consistent.

Table 9.5. The proportion of miscues David self-corrected for each strategy.

	% Sounding sc	% Initial-Letter sc	% Meaning sc
Mean 1998 - 1999	78	53	65
Range 1998 - 1999	44 – 94	22 – 100	0 - 100
Mean 1998	68	49	65
Range 1998	44 – 79	25 - 78	0 - 100
Mean 1999	88	61	65
Range 1999	67 – 94	0 – 100	0 - 100

Note: sc = miscue self-corrected, sounding = Sounding strategy; Initial-Letter = initial-letter strategy; Meaning = meaning strategy.

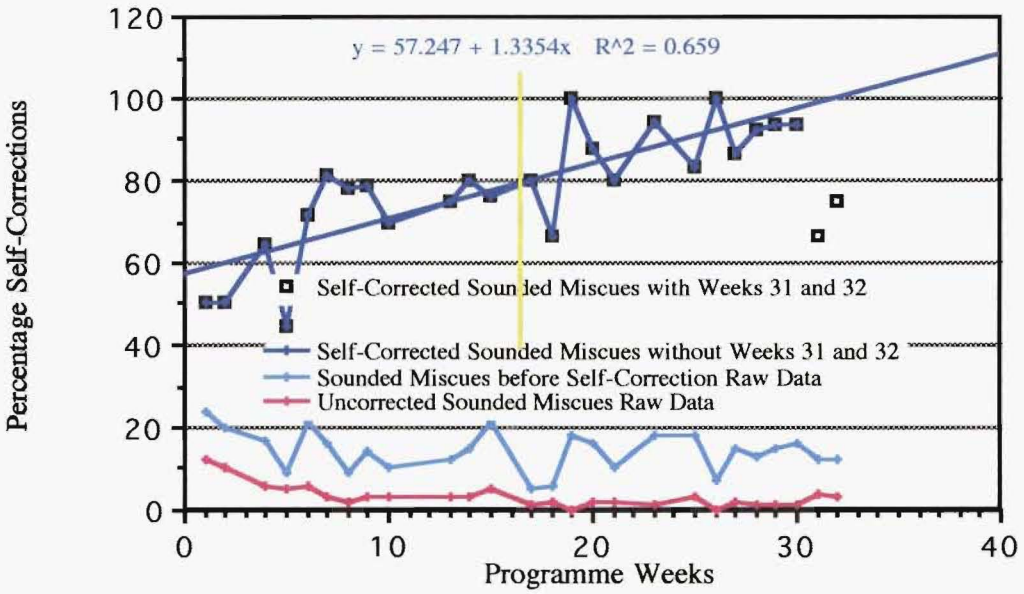

Figure 9.12. The percentage of sounding strategy miscues that David self-corrected for the strategy running record series.

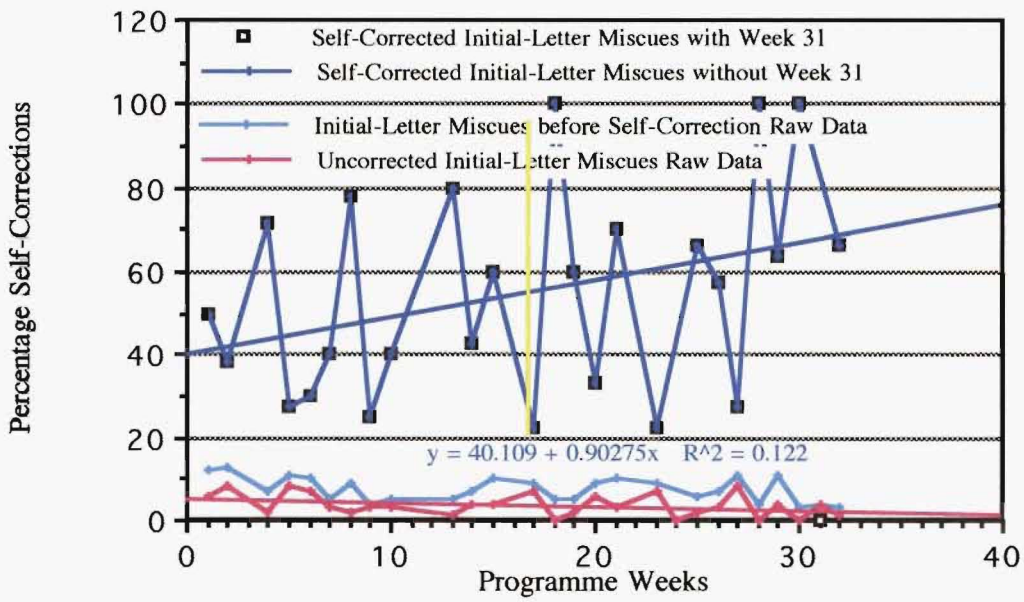

Figure 9.13. The percentage of initial-letter strategy miscues that David self-corrected for the strategy running record series.

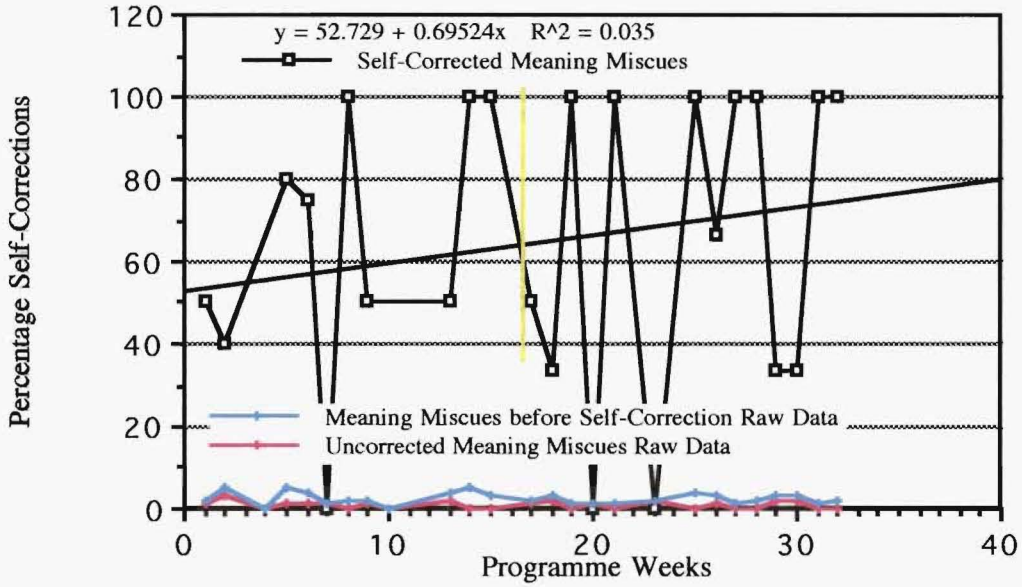

Figure 9.14. The percentage of meaning strategy miscues that David self-corrected for the strategy running record series.

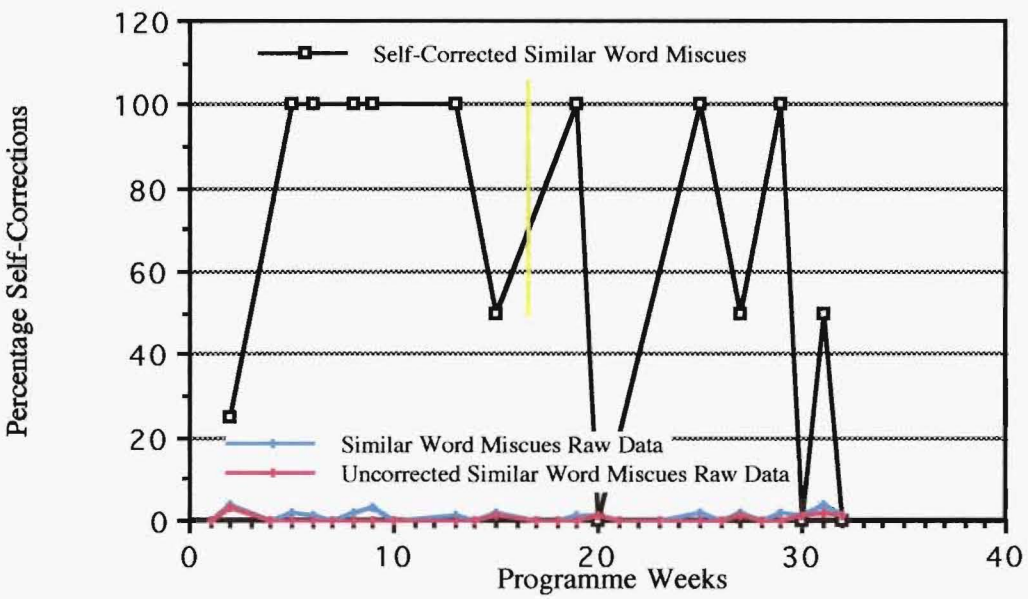

Figure 9.15. The percentage of similar word strategy miscues that David self-corrected for the strategy running record series.

For the initial-letter strategy, the 1999 mean for the percentage of miscues that were self-corrected was 12% higher than that for 1998 (see Table 9.5). If the very atypical value for week 31 is deleted, the regression line shows an increase of 30% by the end of the programme (see Figure 9.13). However, the spikiness of the graph and the regression coefficient show the very high variability in the week-to-week self-correction rates with which these overall gains were associated. The very low regression coefficient confirms that any change associated with the programme was insignificant when considered in relation to the weekly variation in scores.

For the meaning strategy, very low sample sizes have distorted the percentage self-correction values. After week eight, it was not uncommon for David to have self-corrected all his meaning strategy miscues (see Figure 9.14).

During the programme David showed consistent improvement in self-correcting his sounding strategy miscues. This growing expertise was indicative of his growing ability to apply the letter-sound knowledge and strategies that he was being taught. However, his very high overall rate of self-correction (compare Figures 9.5 & 9.6 also) should be regarded as only a step on the way to automatic, accurate word recognition. Encouraging David to correctly identify each word as he initially encountered it, without self-correction, was an important overall focus for this programme.

Characteristics of Sounding and Initial-Letter Strategies

When David used the initial-letter strategy, all of his miscues were real words, nearly all had meaning within their context and half had a similar appearance to the text word (see Table 9.6). It is apparent that David was making full use of meaning to help him identify words but was using incomplete and inaccurate letter information. These results support the contention already discussed that David had great difficulty developing the automaticity for knowledge about the letter-sound information that was necessary to decipher words.

When David used the sounding strategy, only one-third of his miscues were real words and only half of these real words had meaning in their context (see Table 9.6). Two thirds of the real word miscues had a similar appearance to the text word.

The proportion of the real word miscues that were similar to the text word was higher when he used the sounding strategy, indicating he was using more letter information. When he had used the initial-letter strategy for a miscue, he appeared to have used meaning and incomplete letter information as his principal method of deciphering the miscue, in line with the Ministry of Education's recommendations for reading.

Comparing the characteristics of his initial-letter strategy with his sounding strategy, it can be seen that David's initial-letter miscue was:

- three times as likely to be a real word;
- twice as likely to have a similar appearance to the text word; and
- six times as likely to make sense in the sentence.

Table 9.6. The characteristics of David's sounded and initial-letter miscues.

	% Real Words	% Similar Words	% Meaning Words
	Sounded Miscues		
Mean	31	22	15
Range	0 - 100	0 – 100	0 - 100
	Initial-Letter Miscues		
Mean	100	52	93
Range	100 - 100	50 - 100	50 - 100

Note: Meaning Words are words that gave an acceptable meaning within their sentences. This was not necessarily the author's meaning nor did the meaning necessarily fit with the rest of the passage.

David had two methods of attempting to decide whether he had found the correct text word. His first method was to discover whether it made sense within the sentence. His second method was to go back and sound a word to see if his chosen word fitted the letters. When he miscued with a word of similar appearance that made sense within the context, he probably found it difficult to detect the miscue. He was likely to have thought that his use of initial letters, some letter information and meaning was successful.

When he used the sounding strategy, he often did not find a real word with meaning in the sentence. When this was so, he was likely to have known he had miscued. His higher and less variable self-correction scores for the sounding strategy attest to this view.

Strategy Use and Word Length

Samples for the number of words for each syllable category within each strategy type were very small. Inflation of the differences in David's week to week percentage use was especially evident for the three and four syllable categories of the sounding and initial-letter strategy data, and for the meaning and similar word strategy data.

Table 9.4 shows that David made most use of the sounding and initial-letter strategies and that he used the sounding strategy nearly twice as often. Table 9.7 presents information as to how the number of syllables in a word influenced David's choice of strategy.

For one syllable words, David used the sounding and initial-letter strategies with nearly equal frequency (see Table 9.7). In addition, he used the meaning strategy about half as often as he used either the sounding or initial-letter strategy and he made occasional use of the similar word strategy.

Table 9.7. The relationship between David's strategy selection to decipher miscues and word length.

	1 syllable	2 syllables	3 syllables	(4+5) syllables
	Sounded miscues			
Mean %	32	72	82	91
Mean % ' 98	31	73	74	
Mean % '99	34	71	89	
Range	0 - 64	60 - 100	50 - 100	0 - 100
	Initial-Letter miscues			
Mean 98-99 %	37	22	10	9
Mean % '98	40	16		
Mean% '99	32	24		
Range	0 - 56	0 - 46	0 – 50	0 - 100
	Meaning Miscues			
Mean %	18	3		
Mean % '98	19			
Mean %' 99	18			
Range	0 - 40	0 - 14		
	Similar Word Miscues			
Mean %	8			
Range	0 - 36			

David used the sounding strategy for nearly one third of his miscued one syllable words (see Table 9.7). His percentage use was very variable but for the most part lay between 20% and 50% throughout the four terms of the programme (see Figure 9.16). The regression line shows David increased his use of sounding for one syllable words during 1998, that is, during the first two terms of the programme. But the regression coefficient shows that this increase was relatively insignificant in comparison to his week to week variability. In 1999 his percentage use, though variable from week to week, showed no increasing or decreasing trends.

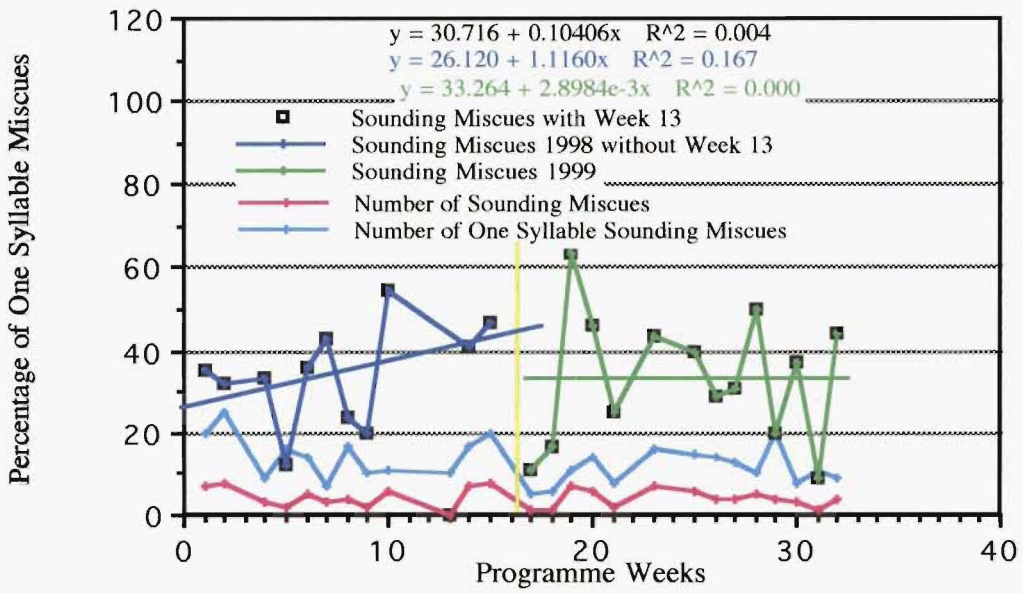

Figure 9.16. The percentage of one syllable miscues for which David used the sounding strategy.

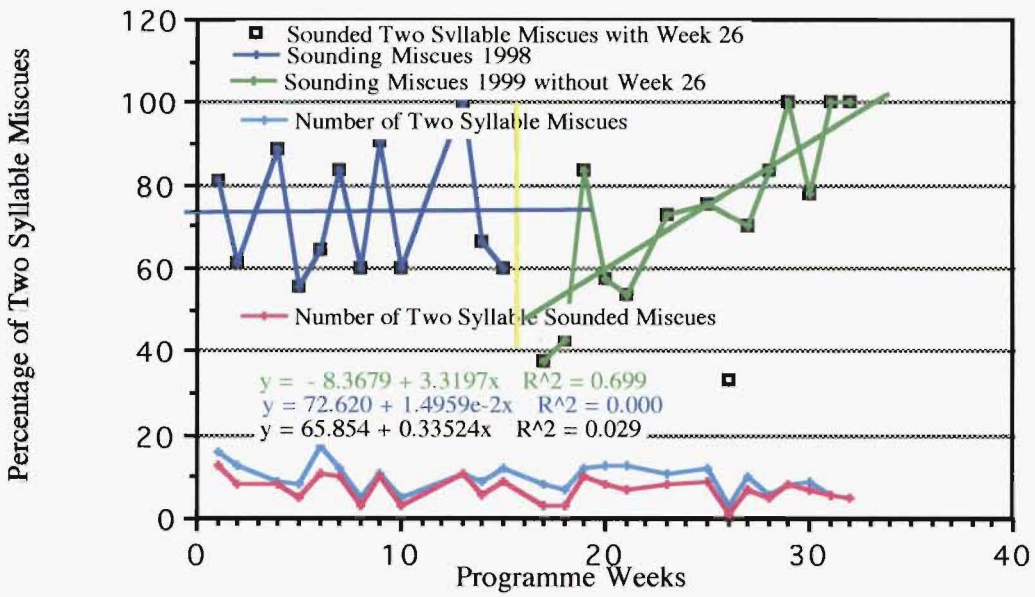

Figure 9.17. The percentage of two syllable miscues for which David used the sounding strategy.

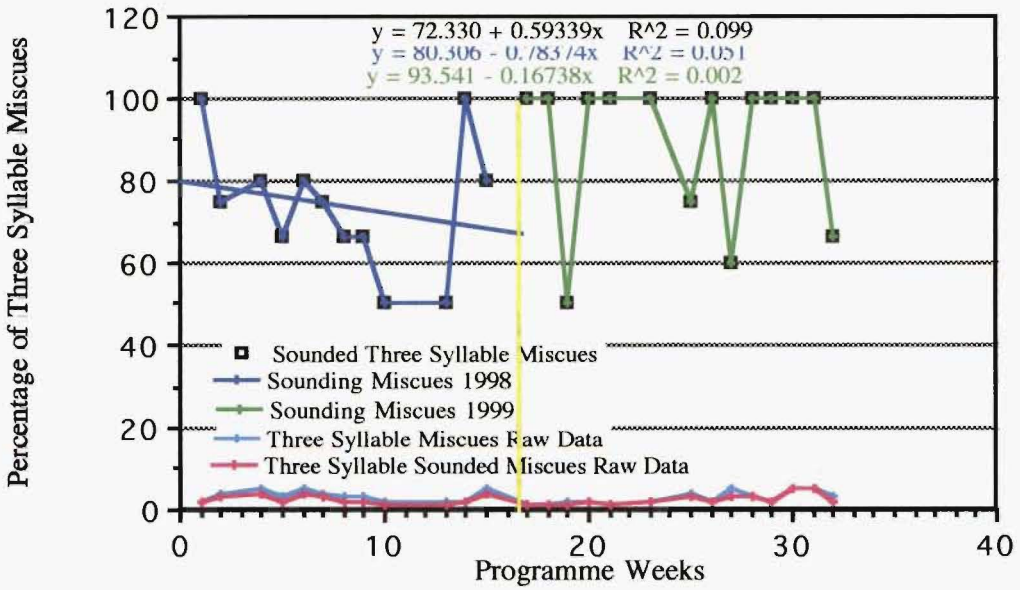

Figure 9.18. The percentage of three syllable miscues for which David used the sounding strategy.

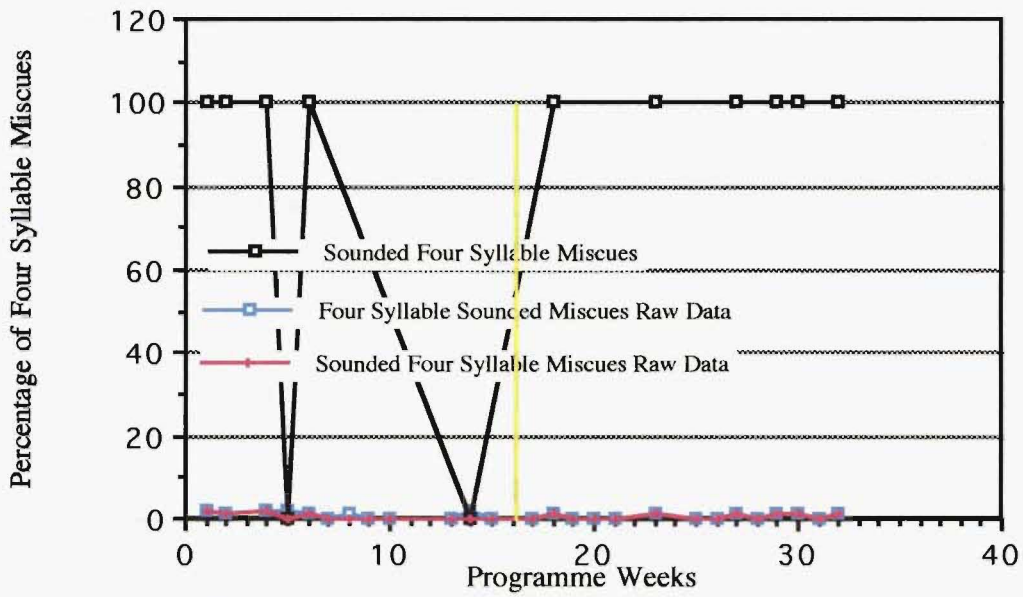

Figure 9.19. The percentage of four syllable miscues for which David used the sounding strategy.

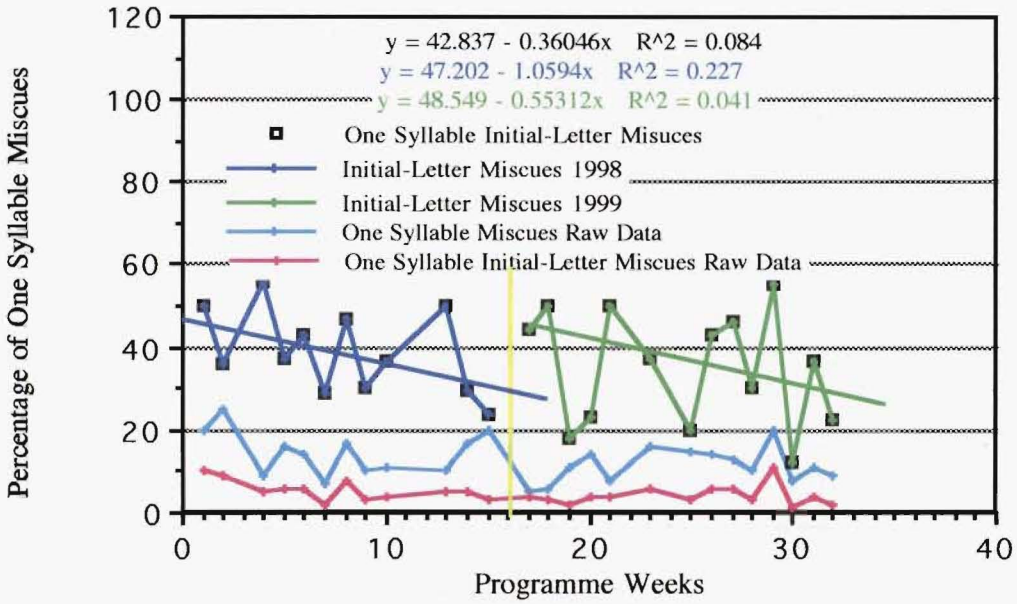

Figure 9.20. The percentage of one syllable miscues for which David used the initial-letter strategy.

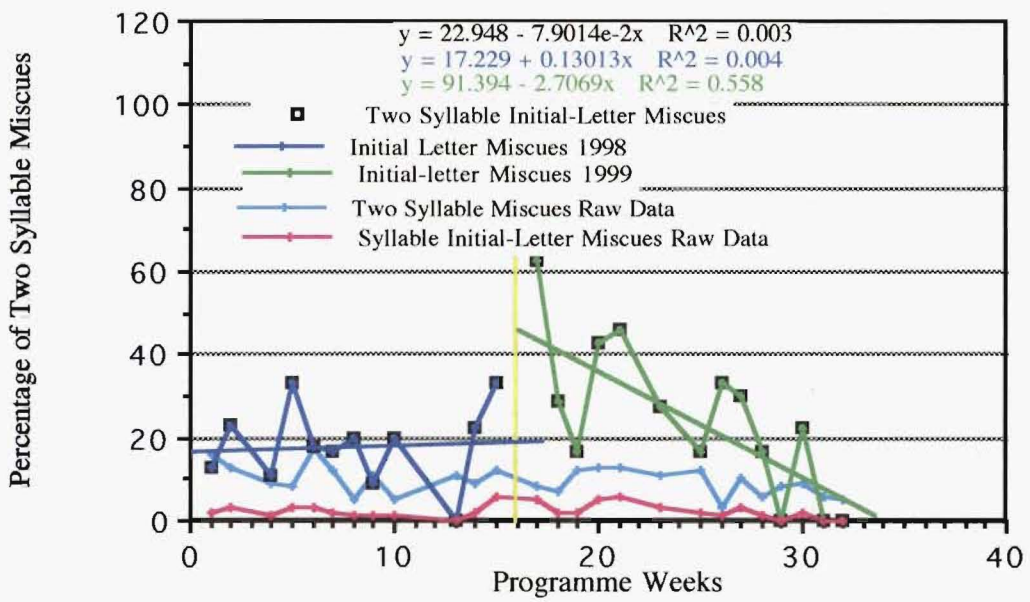

Figure 9.21. The percentage of two syllable miscues for which David used the initial-letter strategy.

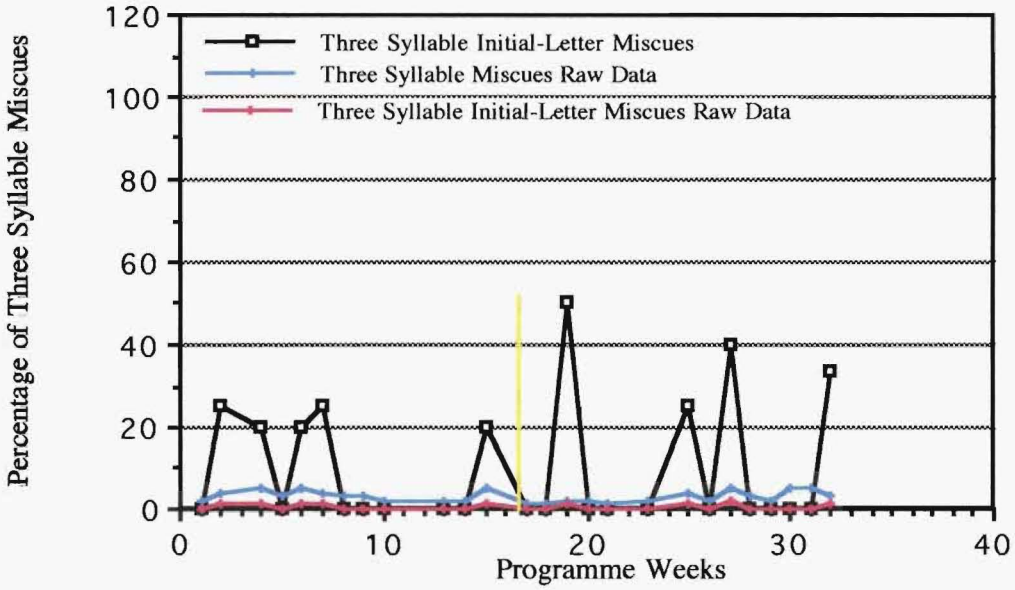

Figure 9.22. The percentage of three syllable miscues for which David used the initial-letter strategy.

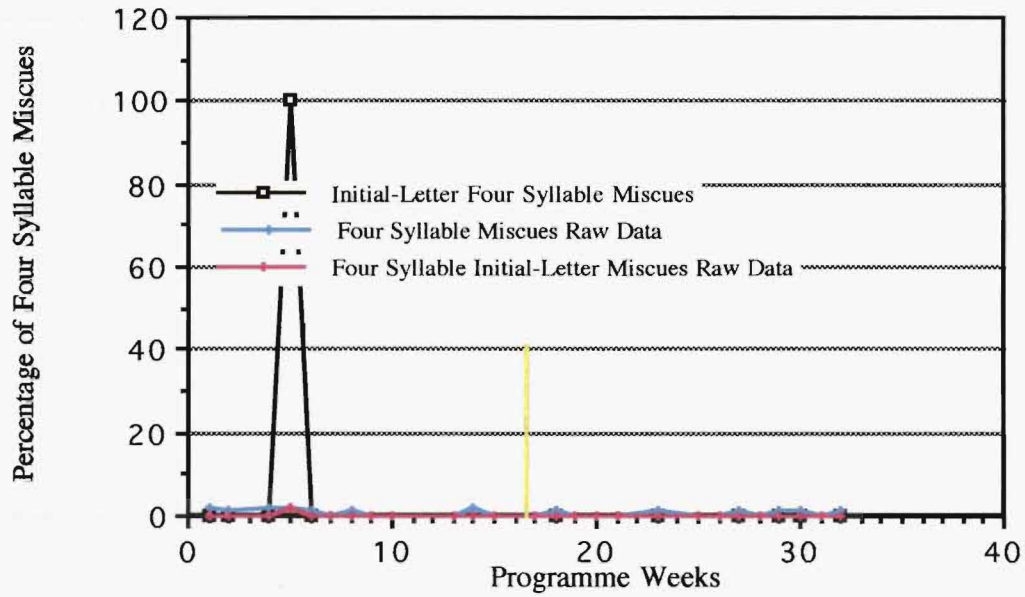

Figure 9.23. The percentage of four syllable miscues for which David used the initial-letter strategy.

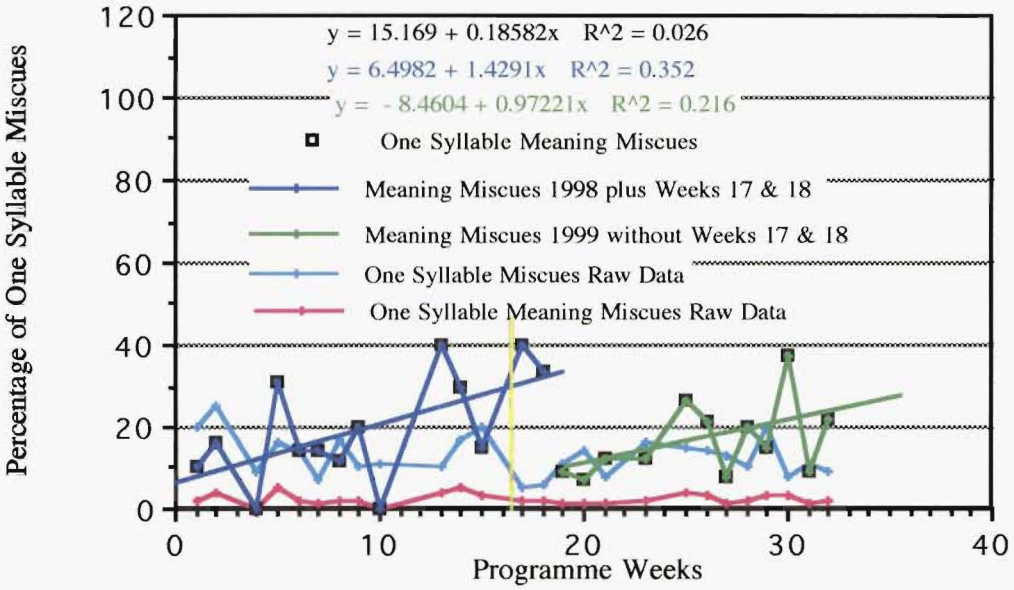

Figure 9.24. The percentage of one syllable miscues for which David used the meaning strategy.

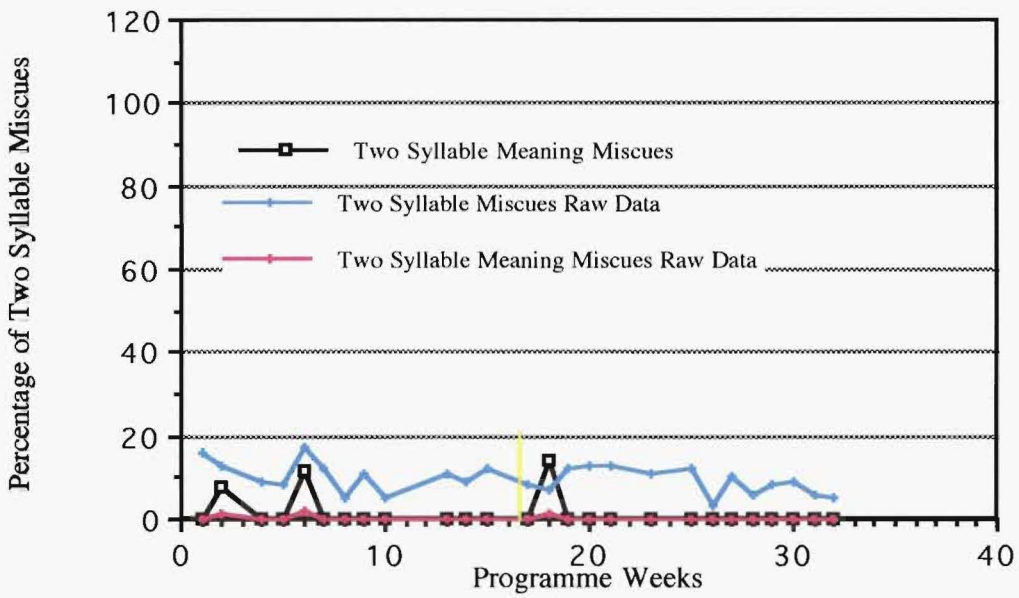

Figure 9.25. The percentage of two syllable miscues for which David used the meaning strategy.

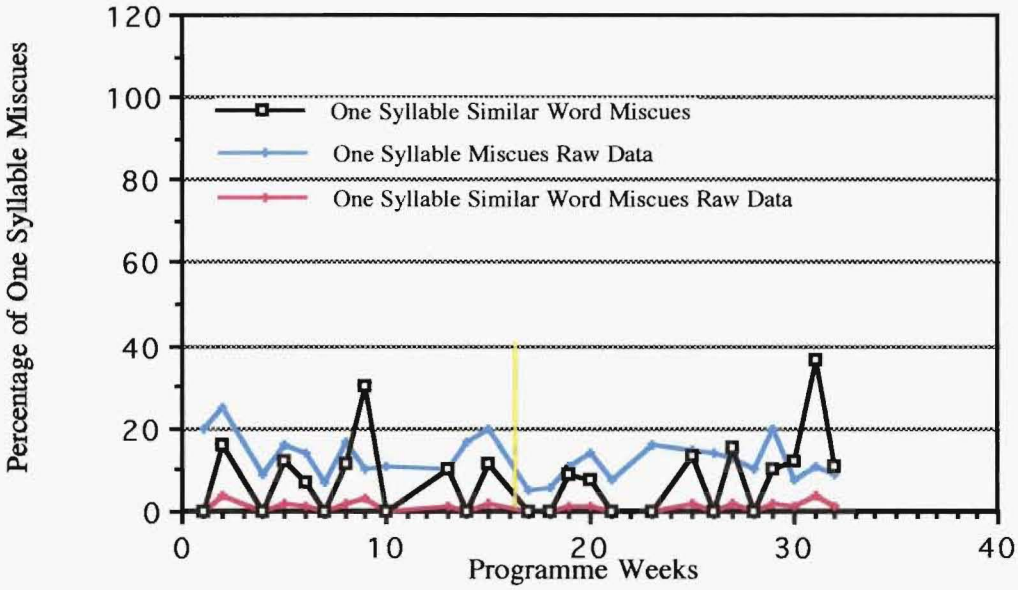

Figure 9.26. The percentage of one syllable miscues for which David used the similar word strategy.

He used the sounding strategy for nearly three quarters of his two syllable miscues with a range that lay for the most part between 60% and 100% (see Figure 9.17). The exception was a decline at the beginning of 1999. During the first two terms of the programme, David's percentage use was extremely variable from week to week but the regression line shows that there was no overall increase or decrease. During 1999, after the initial decline, he consistently increased his usage until, by the end of the programme, he was usually using sounding for all his two syllable miscues.

David was variable with his use of the sounding strategy for three syllable words during 1998 (see Figure 9.18). In 1999, in most running records he had used this strategy for all his three syllable miscues. With the occasional exception, David usually used the sounding strategy for four syllable words (see Figure 9.19).

At the beginning of 1998, David used his initial-letter strategy for between 35% and 50% of his one syllable miscues (see Figure 9.20). David recognised the difficulties he experienced in deciphering one syllable words. " Big words I get, little words are the problem," he said (see Appendix W, Table W1). By the end of 1998, apart for one record where his usage rose to 55%, he used the initial-letter strategy for between 20% and 40% of the time. In 1999, David's use of the initial-letter strategy was very variable from week to week but usually lay between 10% and 50%. His mean percentage use dropped by approximately 8% from 1998 to 1999 (see Table 9.7).

David used the initial-letter strategy for between 10% and 30% of his two syllable miscues in 1998 (see Figure 9.21). The regression line indicates that there was little change between the beginning of the programme and the end of 1998. At the beginning of 1999 with a range extending between 63% and 18% David's use of the initial-letter strategy was very variable. His usage, although remaining variable, decreased during 1999 and was zero for three of the four running records at the end of the programme.

David's use of the initial-letter strategy for three syllable miscues was spasmodic throughout the programme (see Figure 9.22). He used it for two miscues that were four syllable words. Both of these miscues were in the same running record (see Figure 9.23).

David's use of the meaning strategy for one syllable words rose through 1998 and continued to rise until week 18 of 1999 (see Figure 9.24). At the beginning of 1998, David's use lay for the most part between 0% and 20%. From week 13, his use increased to lie between approximately 30% and 40%. In week 19 of the programme, David's use of the meaning strategy plummeted to between 7% and 13% until week 23. From week 25, his percentage use increased slightly but became more variable.

For the remainder of 1999, with one exception, it lay between 10% and 30%. David used the meaning strategy for one syllable words only, with the exception of three running records, which contained several two syllable miscues (see Figure 9.25).

To summarise, by the end of the programme David principally used the sounding strategy for unfamiliar words of two or more syllables. He used the initial-letter strategy slightly more often than the sounding strategy for one syllable words. His use of the initial-letter strategy for two syllable words dwindled and became zero for three of the four final scores of the programme. For three syllable miscues, his use of this strategy was spasmodic and he only used it in one running record for four letter words.

David increased his use of the meaning strategy (see Figure 9.24), until week 18. At week 19, his use showed a sudden drop followed by a gradual increase thereafter. This drop was on the same week as the drop in his uncorrected strategy percentage accuracy scores (see Figure 9.5). It is tempting to postulate that the patterns of his use of the meaning strategy for his miscues reflected his total use of the meaning cue for both miscues and words that were accurately deciphered when they were first encountered. That is, that his use of the meaning cue with miscues reflected the overall frequency of his attempts to integrate the meaning cue with letter-information.

As will be discussed later, David volunteered that he had learned to integrate the meaning with the words as he read. This was apparently difficult for him. It is possible that his percentage use of the meaning cue for miscues did reflect his overall frequency of the integration of meaning and letter information for word recognition. It is tempting, therefore, to postulate that when he was in a state of emotional tension as in week 19, David's ability to integrate the meaning as a cue was suppressed.

The Initial-Letter Strategy

Examples of one, two and three syllable initial-letter miscues are listed in Appendix V, Tables V1, V2 and V3 respectively. Selected examples from these Tables are given in their sentence context in Appendix V, Tables V1a, V2a and V3a.

The initial-letter miscues are real words that began with the same letter as the text word. When these words are viewed as a complete sample, it seems likely that David's miscues appeared to have a similar appearance to the text word to David, even if this would not have been so for a proficient reader.

Scanning through his one, two and three syllable miscues (see Appendix V, Tables V1a, V2a & V3a) reveals that David had predicted his miscues from the context of the preceding text. Miscues were self-corrected where either the meaning or the syntax appeared inconsistent with the following text. (see Appendix V, Table V1a: examples 11c & 15b for meaning and 11b for syntax).

The characteristics of David's initial-letter miscues have been discussed previously. The characteristics of these tabled miscues confirm that they were real words with meaning in their context. Only half the words were considered to have a similar appearance to their text word. When the sample of initial-letter miscues is viewed as a whole, it seems likely that a higher proportion of these words appeared as similar in appearance to David. The disparity between the number of words a proficient reader would view as being similar to the text word and the number that David viewed as similar may be an indication of the extent of his difficulties in achieving accuracy when identifying letter representations of sounds.

Summary of the Programme Induced Changes for David

David had been taught to read within the school system according to the Ministry of Education's (1985) prescribed syllabus of sampling the text, predicting from meaning and minimal letter information, confirming his prediction from the meaning of the passage and self-correcting where necessary. He had also received extensive out-of-school teaching, which emphasised letter-sound correspondence and sounding through words. David's interests required reading proficiency and he was desperate to achieve full literacy skills, so desperate in fact that the tension associated with this ambition at times interfered with his progress.

The programme taught phonemic awareness, letter-sound information, consonant blends and phonograms, and the strategies to apply this knowledge to unfamiliar words. At the beginning of the programme, David was accurate with his letter knowledge for consonants and short vowels. He still had some difficulty in accurately recognising consonant blends in isolation and extreme difficulty in accurately giving both a consonant blend and a phonogram together, even when he knew each in isolation.

David showed progress in his word recognition as a result of the programme. His Burt Word Recognition score showed an increase of one age equivalent year. His Neale scores showed an improvement of more than 1.5 age equivalent years by week 24. Unfortunately, at the end of the

programme, his Neale age equivalent scores had regressed by a year, apparently as a consequence of the tension he was exhibiting at this time.

David's uncorrected scores (see Figure 9.5) for the strategy running record series showed a similar pattern to his Neale scores. Good progress was recorded as a result of the programme up until week eighteen. Then his percentage accuracy scores regressed. Although David improved his scores during the following weeks, he never again achieved scores at the levels he attained in weeks 17 and 18. Academic and social tensions associated with being mainstreamed appeared to have lowered his reading accuracy scores in the uncorrected strategy running record series.

The self-corrected scores (see Figure 9.6) showed a drop, but this drop was half that shown by the uncorrected scores. The programme was responsible for an increase in self-correction for the sounding strategy indicating a growing ability to apply the letter knowledge and strategies taught within the programme. Unfortunately, this growing knowledge was not yet so automatic that David used it accurately on his first encounter with a word.

The programme changed David's strategy use. He increased his use of the sounding strategy for two and three syllable words. By the end of term four, he was often using this strategy 100% of the time for two syllable words. For three syllable words, David used the sounding strategy 100% of the time for approximately two-thirds of the running records. He had decreased his percentage use of the initial-letter strategy for two syllable words to 0% for three of the four final running records.

Two aspects of the results indicate that teaching strategies for word recognition to David was effective. First was his increasing rate of self-correction for the sounding strategy. This indicated that he was increasingly more able to apply his newly learned letter information and strategies when deciphering words. Second, David was aware that strategy use was the focus of the strategy running record series. In 1999, for this series of assessments, he had twice as many scores in the easy text range of the strategy running record series, as he did in the fluency running record series even although the text had a higher age equivalent rating.

Several factors, when considered together, build a picture of the difficulties David experienced with integrating the meaning cue with letter information and the effect that tension had on this integration:

- When David used the initial-letter strategy, he used very incomplete letter information but nearly all the miscues had contextual meaning. In contrast, when he used more letter information in the sounding strategy, only one third of his miscues were real word and only half of these had

contextual meaning. That is, his use of contextual meaning was lowered as he paid more attention to the letter information.

- Indications of difficulties with integration of the meaning cue were the miscued gender of the dog in week 27 of the fluency running record and the miscue keeped/kept in week 16 that have been discussed previously.

- Indications of difficulties with the integration of the meaning cue as a result of tension were twofold. First, David had downturns in his scores, for the Neale accuracy scores, for the fluency running record percentage accuracy scores and for his uncorrected strategy running record percentage accuracies, that coincided with periods when he was very tense. His Burt scores did not show any similar downturns. This is a test of reading words in isolation where prediction from meaning cannot be a cue,

- Second, the meaning strategy use for one syllable words reflected the same pattern as David's percentage accuracy scores in the strategy running record series with a drop at week 19. This coincided with a period when David was experiencing much stress, which suggested that David made less use of prediction from meaning in times of stress.

David's Strategy Use and Reading Self-Beliefs

David as a Strategic Reader

Before the beginning of the programme, David stated that he tried to get the sounds and, if this did not work, he would skip the word and come back to it (see Table 9.8). He thought he would have difficulty with most of the 'big' words on a page, that he could decipher them, but that it might take a long time.

When he first entered the programme, David's reading was very slow and halting. He reran groups of words, phrases and sentences. He said that he had difficulty with small words (see Appendix W, Table W1). He reran the sounds in words, often starting with one or two of the initial sounds and gradually adding more in. (see Appendix W, Table W1). Sometimes he would sound a word through that he had just read correctly. "I don't know why I don't trust myself," he would say (see Appendix W, Table W1). David volunteered at the end of the programme (see Table 9.8) that initially he would sound the word through and then reread for meaning, often up to four times, until the meaning clicked. He thought that he could eventually decipher the words but that it would take a long time

because he needed to do so much rerunning of the words and the sentences in order to decipher the words and understand the meaning.

David was taught the same strategies as the other participants in the programme, for example: breaking the words into sensible letter groups, changing letter sounds and finding a word that fitted the letter groups and the meaning. In addition, he was encouraged to stop resounding words and rerunning sentences but instead to sound through to the end of a word before resounding and to try to read more of the sentence before rerunning.

Table 9.8: The cognitive knowledge and metacognitive monitoring that David could verbalise about his strategy use for determining unfamiliar words.

Date	Strategies: Cognitive Knowledge for Unfamiliar Word Recognition	Strategies: Metacognitive Monitoring for Unfamiliar Word Recognition
25.6.98	Try to get the sounds. Not working, skip it and come back to it. Sometimes the context of the sentence. If I can't get it I read on	Difficult words: Most of big words on the page. I may get them. It would just take a long time. It's a wrong word if I carry on and it doesn't make sense. Only trouble is with sounding out.
3.9.98	Using finger to help track. Doesn't think it makes reading easier. He thinks it's a habit as he can track with his eyes. Uses finger to break up words. Breaking up words into syllables and sounds. Sometimes switches and reads on to see if it makes sense.	
24.9.98	Left a word and read on. Sounding through. Using single letters today rather than letter groups.	
15.10.98	Sounding every letter instead of trying to see letter groups	
29.10.98	Usually I sound it out, but now when I'm letting go (Trying to recognise the word as he first encountered it) its getting better, breaking into letter groups. Can't work it out, skip it and come back. Go back and sound it out.	Correct Word: if it fits sentence and letter groupings are correct. Wrong word: doesn't make sense and letter groupings are not correct.
12.11.98		Just knew it was wrong. Went back. Looked at it again. Resounded it out. Strategies to use are breaking it into sensible letter groups, be flexible and change the vowel sound if it doesn't make sense.
24.11.98	Sounding out with letter groups. E.g. spr-ead Leave it out, carry on and come back. Gives meaning of sentence and word. Can't work it out, leave it and carry on. Wrong:, ask teacher.	If not making sense wonder if its right. Doesn't make sense in sentence or paragraph. Right word: making sense in sentence. Looks and sounds right. Looks right, sounds fit letters. Sounds right, sounds fit letters. Difficult with words that don't say what letters say.

Table continued on the next page.

Table 9.8 continued from the previous page.

18.2.99	Sounding out, but now trying to let go and let word pop into head. Working sometimes.	Knows its right or wrong from the sound of the sentence around it.
4.3.99	Trying to let it flow into his head. Sounding out using letter groups.	Not sure if using letter groups is better than using individual letters. He can hear that he is not re-running as often.
20.5.99	Breaking up the words.	
27.5.99	Using letter groups. Trying to not sound out (letter by letter). Used word families. Can't remember which word he used it for. Tries to use it quite often, rerunning for meaning.	
13.7.99	Use sensible letter groups, the ones in his notebook. Pace: sensible pace, so can do it fluently (reading without rerunning, both sentence and sounding of individual word). Speed up or slow down as needed. Listen to what I'm (David) saying. Get meaning of sentence along with reading sentence. Use to sound through and then re-read for meaning until meaning clicked after about four extra times. Trying to lose individual letters.	
14.10.99	*Exhausted:* ex-am, ex –ist –ed *whimpering:* wh-ime –per-ing, whimpering. (Changed j sound but was not aware that he had) Just looking for a word. Sounding out and sometimes the word just pops. Not blocking out initial effort. Sounding through, knowing what story is and having most of the information. Used to say sentence and then try and work it out, the meaning. Now can work out the meaning as he reads most of the time.	Learning the letter groups was the most helpful.

Note: The examples of unfamiliar words in this table were words from Neale texts. The levels for the corresponding dates are given in Table 9.10.

A set of personal strategies (see Appendix W, Table W2) was also taught to David to try and eliminate his dysfunctional overuse of the sounding and rerunning-the-sentence strategies. He was encouraged first to try to recognise the word from the letters and the meaning without sounding, and second, to use groups of letter rather than individual letters and, third, to listen to the sounds the first time as he sounded through. He was encouraged to slow his reading rate to a pace where he could integrate the sound of the words with the meaning of the sentence. To facilitate his use of these new strategies, it was recommended that he read only very easy text for a time.

One of David's main interests was reading *Star Trek* magazines and he was most reluctant to stop. But the following sample of the language used demonstrates the high deciphering ability necessary to read these magazines.

"The technological explosion of the 20th century brought about the creation of many highly specialised functions onboard seafaring vessels"

Reading text at this level of difficulty only served to further reinforce David's use of his dysfunctional resounding and rerunning-the-sentence strategies. Eventually he did start to read a very easy version of *The Empire Strikes Back* which was at an ideal level for him.

A change in David's reading pattern is apparent by week 8 (see Appendix W, Table W1). By week 18, David's pattern of strategy use no longer appeared so dysfunctional. It can be seen from the transcription that he had made a lot of progress in integrating the sounds of the words, the words and the meaning of the passage.

These observations add credence to the previous postulation that David experienced great difficulty integrating meaning with letter information as he read. This difficulty may have been as a result of the cognitive load imposed by David's difficulties with accurately reading letter-sound information. However, it was observed that on occasions David experienced a delay in comprehending the meaning of a group of words that he had repeated aloud once or twice. A cognitive delay in accessing the meaning of words may have been a further barrier to deciphering text.

As David practised using his new strategies that encouraged him to integrate meaning as he read, he showed progress in his percentage accuracy scores and particularly his uncorrected percentage accuracy scores until week 18 (see Table 9.5). His score in week 18 showed a sudden downturn that coincided with a period of high stress. These facts support the suggestion that his high stress levels resulted in a reduction in his ability to integrate the meaning cue with letter information.

David was encouraged to use the consonants, consonant blends and phonograms taught in the programme instead of individual letter sounds, as this facilitated blending the sounds to form words (for example, blending spr - ing instead of /s/-/p/-/r/-/i/-/n/-/g/). David knew that he knew the consonants and the short vowel letter representations and had practised using them for many years. He also knew that he found it very difficult to recognise the consonant blends and phonograms accurately, although practice at home was improving this accuracy markedly. He was, therefore, very inconsistent in his change to using letter groups rather than individual letter sounds (see Table 9.8 & Appendix W, Table W2). In week 19, at the beginning of March, although he was now consistently trying to use letter groups, he was still unsure that this was the better strategy.

It was also suggested to David that using his finger or a pen might help with his accuracy in letter and letter group recognition. He was unconvinced that this would be helpful. However, it was observed that he did sometimes use his finger to isolate the groups of letters.

To summarise, David had difficulty with accurately recognising consonant blends and phonograms. This may have resulted in a heavy cognitive load that prevented David from thinking of other reading cues such as meaning. He also had difficulty comprehending the meaning of the phrases and sentences when he first read them. This may have been a consequence of a cognitive delay in accessing meaning as he read. These factors led to difficulties integrating the meaning cue with letter information. In response, David had developed two dysfunctional strategies. The first was resounding a word many times and the second was rerunning the sentence several times until he comprehended the meaning.

David was encouraged to sound whole words using consonants, consonant blends and phonograms. He was also encouraged to read complete phrases or sentences slowly enough to enable him to comprehend the sentence on his initial attempt. As a result of the programme he learned to comprehend the meaning of the sentence as he read, without resounding and rerunning (see Table 9.8).

Despite the very real problems, David had with word recognition, he was not the learned helpless learner hypothesised by Stanovich (1986). He used the strategies he had been taught in earlier reading programmes, and although he was sometimes slow to change to his new individualised strategies, he did eventually do so. He was not learned helpless but his overuse of the rerunning and resounding strategies was dysfunctional.

David's Causal Attribution Beliefs

At the beginning of the programme, David believed that his reading comprehension was average. He thought that his silent reading ability was below the mean but not in the lowest ability range and that his oral reading and his speed of reading abilities were amongst the lowest in his cohort (see Table 9.9). Apart from his belief about his silent reading, his academic self-beliefs about his reading were realistic.

By the finish of the programme, David's self-beliefs about his reading ability had changed. He believed that his comprehension ability could be ranked with the best in his cohort; that his silent reading was of an average standard and his reading speed ranged between average and below average

but not at the bottom of his cohort. Oral reading was the only area where he consistently thought he was below average and even for this he did not consider that he was at the bottom of his cohort. As a result of the programme, David had developed more positive self-beliefs about his oral reading ability and unrealistically high self-beliefs about his comprehension, silent reading and speed of reading.

David's causal attributional self-beliefs about his knowledge of the best ways to read, about whether he guessed the words or not and about how hard he worked were the same for his self-rated easy and hard text. This suggested that his self-rated easy text was in fact difficult text for him (see Table 9.10).

Table 9.9. David's ranking of his reading ability in comparison with the other pupils in his school year.

Date	School Year	Silent Reading	Oral reading	Comprehension	Speed of Reading
22.6.98	10	4	5	3	5
3.11.98	10	4	4	2	3
15.2.99	11	4	5	1	4
13.7.99	11	3	4	1	3
20.10.99	11	3	4	1	4
		David's rating of his last year's (year 10) reading ability from his year 11 perspective as an indication of how he thought he had improved.			
13.7.99	10	4	5 in class	1	4
20.10.99	10	5	5	1	5

Note: David rated his ability on a scale of 1-5. On a par with the best readers in the school = 1. The questions used to obtain this self-belief data are presented in Appendix F, Question 6a.

His self-beliefs became more positive as a result of the programme. In the beginning, he considered that he often knew the best ways to read a word, that he usually didn't guess and that he always tried hard. By the end of the programme, he thought that he knew the best ways to read the words, and that he didn't guess. The self-beliefs he recorded about his causal attributions for the strategy running record readings show similar changes in his self-beliefs about guessing (see Appendix W, Table W3).

The programme also changed David's understandings about easy and hard text (see Table 9.11). At the beginning of the programme, he rated as easy text a Neale Diagnostic Tutor text for which the equivalent level Form 1 text was one level above his test ceiling in his reading assessment. He considered that he could read the page for this 'easy-to-read text' but that it was hard to read. By the end of the programme, he chose as easy text a Neale Diagnostic Tutor passage for which the equivalent Form 1 text lay within his independent reading level in his reading assessment. He considered that it would be easy to read a page of this text.

Table 9.10. David's percentage accuracy and causal attribution beliefs for the passages that he had rated as easy or hard to read.

Date	E:H	N	% Acc	Know/Don't Know	Guess/Didn't Guess	Try/Didn't Try
6.98	E	4	Ceiling Level 3	3	4	1
13.7.99	E	2	96%	1	5	1
14.10.99	E	2	98%	2	5	1
25.6.98	H	6	Ceiling Level 3	3	4	1
13.7.99	H	4	80%	1	5	1
14.10.99	H	4	88%	2	4	1

Note: David's beliefs about his reading knowledge and behaviours were measured on a 1-5 scale. Know = 1, Guess = 1 and Tried Hard = 1. The questions giving the causal belief statements are presented in Appendix D. Know = know the best ways; E = easy; H = Hard; N = Neale level for the Diagnostic Tutor passages; % Acc. = percentage accuracy that David attained in his reading assessment for the Neale passages for Forms One or Two at the equivalent level to those selected by David from the Diagnostic Tutor that were used to determine these causal attributions.

At the beginning of the programme, David self-rated hard text at such a high level of difficulty that it was three levels above his test ceiling in his Neale Form 1 assessment. It was so difficult that he thought he would not be able to read it on his own. By the end of the programme he was choosing as hard-text passages which would have been classified within Clay's (1985) hard text level. That is, by the end of the programme, David had learned to understand the concept of easy text and had learned to rate easy text and hard text at levels that were appropriate for his reading ability.

David's self-ratings about the difficulty level of the journal text he read for the strategy running record assessments show an increase in his self-efficacy judgements about his ability to read these (see Appendix W, Table W3). By week 14, he considered he needed little help and by week 25 he thought that the passages were easy to read. David's uncorrected scores (see Figure 9.5) from week

25 lay in the 80% to 85% range but his self-corrected scores were in a range of between 90% and 100%. Such self-efficacy judgements on David's part were unrealistic and appear to have been based on his perception that he was able to decipher most of the words with self-correction and given enough time. They were not based on a perception of what is normally considered as fluent reading.

The programme had changed David's self-efficacy and his causal attribution beliefs about his ability to read. When it finished, David could rate the reading difficulty level of passages more appropriately in terms of his ability to read them independently. He now thought that he knew the best ways to decipher difficult words and that he did not guess. On the down side, the programme had been too successful in changing David's self-beliefs about his ability to read. He now held unrealistically high self-beliefs about his silent reading, his speed of reading and his ability to comprehend passages. He had also developed very high beliefs about his ability to read that appeared to be based on reading with a high self-correction rate rather than on fluent reading.

Table 9.11. David's percentage accuracy and self-efficacy judgements for reading the passages that he had rated as easy or hard to read.

Date	E:H	N	% Acc	Can Read Page/Can't Read Page	Easy to Read/Hard to Read
25.6.98	E	4	Ceiling Level 3	2	4
13.7.99	E	2	96%	2	1
20.10. 99	E	2	98%	2	2
25.6.98	H	6	Ceiling Level 3	5	5
13.7.99	H	4	80%	5	4
14.10.99	H	4	88%	4	3

Note: David's self-efficacy judgements about his reading ability were measured on a 1-5 scale. Can read = 1, Easy to Read = 1. E = easy; H = hard; N = Neale level from the Diagnostic Tutor; % Acc. = percentage accuracy that David attained in his reading assessment for the Neale passages for Forms One or Two at the equivalent levels to those selected by David from the Diagnostic Tutor that were used to determine these self-efficacy ratings. The self-efficacy judgement questions are given in Appendix D.

As has been previously discussed, tension appeared to adversely affect David's progress. The positive changes in David's self-beliefs about his ability to read and his causal attribution beliefs indicated that the programme was not a factor in this tension. Tension from home about his ability and his progress and frustration at his limited ability to follow his interests were probable long-term factors. In addition, tension was often associated with social problems at school. The weeks that severely reduced his strategy running record scores were those following his removal from the special needs class at the beginning of 1999. It appeared that the resultant difficulties David

experienced, both with his mainstream class programmes and socially, had a major impact on his progress in the programme.

David's Language Profile

David improved his vocabulary during the year (see Table 9.12) from the upper end of the high average scores to the upper end of the moderately high scores. This increase is not recognised as being a rigorous statistically significant shift. But it can be regarded as large and of significance as the shift is at the upper end of the scale where it is very difficult to achieve a large shift, and especially one that is of rigorous statistical significance.

All David's CELF-3 subtest scores except the 1999 Word Associations subtest were average or above. His score was reduced in the Word Associations subtest in 1999 because he had named only approximately half as many jobs or occupations. There was no obvious reason for this. David's CELF-3 and PPVT-R test results do not show any obvious problems with language, which might have been impacting on his ability to read. However, evidence has been presented earlier about possible difficulties, first, with integrating letter-sound knowledge with the meaning cue for accurate word recognition and, second, with processing the words in a sentence for the meaning as he read

Table 9.12. David's standardised scores for the Peabody Picture Vocabulary Test - revised and selected subtests from the Clinical Evaluation of Language Fundamentals - Third Edition.

	1998			1999		
	St. Score	PR	CI 90%	St Score	PR	CI 90%
Peabody Picture Vocabulary Test—Revised (PPVT–R)						
	112	78	104-118	126	96	114-128
Clinical Evaluation of Language Fundamentals—Third Edition (CELF–3)						
Subtests						
Word Classes	13	84	10-16	12	75	9-15
Formulated Sentences	11	75	9-13	10	50	7-13
Recalling Sentences	10	50	8-12	13	84	11-15
Word Associations	11	63	9-13	9	37	7-11
Rapid Automatic Naming	Errors: 0/3			Time:68/63 secs.		
	Equivalent Age = 13 + years			Equivalent Age = 12 years		

Note: St Score = standard score; mean standard score PPVT–R = 100; Mean standard score CELF–3 = 10; PR = percentile rank; secs. = seconds; CI = confidence interval

David's time in the Rapid Automatic Naming subtest was slightly slow. However, because the time equated to an age equivalent level of 12 years, this factor does not seem to be a significant factor in the inaccuracy and lack of automaticity that characterised David's reading of 9-10 year age equivalent text.

David's Non-word Reading score improved from zero items correct to one third of the items correct in the first five weeks of the programme (see Table 9.13). This was a period when David was taught phonemic awareness, consonant blends and phonograms. He also practised combining blends with lists of different phonograms. The skills practised in these first weeks appear to have improved David's ability to interpret letter information.

Table 9.13. David's raw scores for the subtests of the Queensland University Inventory of Literacy (QUIL).

Queensland University Inventory of Literacy

Subtests	P/Sc	Raw Scores							
		1998				1999			
		22/6	24/8	2/11	23/11	23/2	22/4	27/7	19/10
Nonword Spelling	24	4	3	4	4	5	6	3	4
Nonword Reading	24	0	9	12	10	9	11	13	12
Syllable Identification	12	12	12		12			12	
Syllable Segmentation	12	11	12		12			12	
Spoken Rhyme	12	7	12		9			8	
Visual Rhyme									
Spoonerisms	20	15	16		20			15	
Phoneme Detection	12	10	8		9			10	
Phoneme Segmentation	12	9	11		9			9	
Phoneme Manipulation	10	9	6		6			8	

Note: P/Sc = possible score.

He could identify syllables and break a word into its syllables. However, he had difficulty identifying spoken rhyme. At the beginning of the programme, he was correct with just over half of the rhyming items. Five weeks into the programme, when exercises had been completed involving rhymes and much work had been done with phonograms, he was correct with all the rhyming items. However his scores appear to have dropped back to approximately their original level in the following sections of the programme, where rhyme was no longer emphasised.

David could identify phonemes at the beginning and end of a word but sometimes had difficulty with the middle phonemes. He could count the phonemes accurately for three-quarters of the items or

more, but he sometimes identified two words with the same initial sound as rhyming words. He had inconsistent results for deleting phonemes from words through the course of the year.

He had previously received extensive periods of tuition involving letter-sound knowledge. Therefore, the fact that he was still having difficulty with rhymes and the detection, isolation and manipulation of phonemes is indicative of underlying processing problems in this area. He also had difficulties blending individual letter sounds and letter groups to form words.

To summarise, David was assessed as having average or better vocabulary and language skills. His extreme problems with learning to read appeared to result from four factors. He had difficulty first with tasks involving phonological processing skills, second with accuracy and automaticity for letter-sound information and blending this to form words, third with integrating the letter-sound information and the meaning cue when reading and, fourth with processing the words in the sentence for meaning as he read.

David's Visual Difficulties

Occasional miscues in David's strategy running record series appeared to be the result of two different problems with the visual discrimination of letter information. One type of difficulty involved letter orientation. There were three examples of d/b confusion (/d/-/a/-/k/-ing/baking, do/be) four examples of b/d confusion (stubborn/student, ud, ud-li/obligations, subb/suddenly) one case of a p/d confusion (ripping/riding) an m/w (met/went) confusion, a w/m (was/must) confusion and a v/n confusion (evouch/enough).

The second of David's visual discrimination difficulties involved confusions with letter order (nink/kindergarten, lees/eels/else, how/who, of/for, for/from).

David's Story

David was admitted into the programme with extremely poor word recognition. In his initial assessment, he miscued many one syllable, high frequency words and did not attempt many of the words with two or more syllables. He read using inaccurate and incomplete letter information. Many of his miscues had the same initial letter as the text word and contextual meaning. About half of these miscues also resembled the text word in appearance. His reading was characterised by continuous

sounding and resounding of words and reading and rereading of words, phrases and sentences to cue difficult words. He frequently self-corrected and his reading speed was extremely slow.

David rated as 'easy to read', text that for him was extremely difficult. His positive self-efficacy judgements enabled him to attempt to read such text both at school in his lessons and independently at home. He was intrinsically motivated. His ambition was to be able to read *Star Trek* magazines and he attempted to do so in his spare time. He said of his attempts to read this difficult text that he could read most of the words in the passages, but it might take him some time. He had no understanding of easy fluent reading.

Initially, David believed he was average at reading comprehension; below average for silent reading, a slightly optimistic belief; and at the bottom of his cohort for oral reading and speed of reading, very realistic beliefs. He believed he had more difficulty deciphering the smaller words. His belief in his ability to decipher words was so low that, on occasions, he began to sound and resound words that he had initially read correctly. "I don't know why I don't trust myself," he would say. He thought that he knew the best ways to read about half the difficult words, that he always worked hard at deciphering them and rarely guessed.

At the beginning of the programme, David had difficulty blending letter information to form words and, as a consequence, sounded and resounded words slowly adding in more letters. His use of the sounding strategy was dysfunctional. He had difficulty processing for meaning as he read. As a consequence, he read and reread the words he had deciphered, slowly adding in more words. His use of this rereading strategy was dysfunctional. During this process of resounding and rereading he would endeavour to cue words that fitted the contextual meaning of the passage. He believed that by using these strategies in this dysfunctional way he could eventually decipher most words. This belief was confirmed by his reading experience. Such repetitive resounding and rereading would be most unlikely to ever result in fluent reading.

Despite his years of tuition in letter-sound knowledge, David had difficulties with phonological processing. He had difficulty with hearing rhymes and a slight problem with segmenting and manipulating phonemes. Even more surprising, when his extensive remedial background is considered, was his zero score for non-word reading. This showed his lack of letter-sound knowledge. In addition, David experienced difficulties with blending the letter-sounds to form words. He had problems integrating letter-sound knowledge with contextual meaning to aid his word recognition. He had visual processing difficulties with letter orientation and the letter order in words.

Such a combination of difficulties could indeed combine to produce the extreme difficulties with deciphering text that David experienced.

David entered the programme with listening comprehension that was above the mean and a high average vocabulary. His language test scores did not show any obvious language difficulties that could have contributed to his very severe word recognition difficulties. But, on occasions, he appeared to experience a slight cognitive delay in accessing the meaning of words as he attempted to decipher. Such a delay would have made it difficult for David to easily use meaning and syntax cues for fluent reading.

David routinely exhibited some degree of anxiety, which at times interfered with his ability to interact effectively in his reading lesson. This appeared to result from the high emphasis his parents placed on his reading achievement, their lack of belief in his ability, and his frustration at not being able to read well enough to engage fully in his chosen hobbies.

To summarise, David had several problems that contributed to his difficulties with word recognition. These included phonological and visual processing difficulties, difficulties with letter-sound information, difficulties with blending letter information, problems processing the sentence for its meaning as he read, problems with integrating contextual meaning and letter-sound information, and a high degree of anxiety. He had high intrinsic motivation to read and spent much of his free time attempting to tackle extremely difficult text. His belief in his ability to decipher words was low. However, he had discovered that, if he overused strategies in a very repetitive way, he could usually, given time, decipher the difficult words. He had an under-belief in his ability to read words and an over-belief in the effectiveness of the strategies he used. His strategy was dysfunctional and could not lead to fluent reading.

David's beliefs about his reading ability were more positive at the end of the programme. He came to hold the extremely optimistic beliefs that his reading comprehension was comparable to that of the best in the school and that his silent reading was average. He was slightly optimistic in his belief that his oral reading was now below average but not comparable with the least able in his cohort and optimistic or slightly optimistic in his belief that his speed of reading was average or below average.

David believed in the effectiveness of the phonological processing skills, the letter-sound knowledge and the strategies, both the programme strategies and his individual strategies, that he was taught in the programme. At the end of the programme, he believed he knew the best ways to read the difficult words in 'easy-to-read' text, that he always tried hard to decipher them and that he didn't guess. As a

result of these beliefs, he independently learned and practised using the blends and phonograms at home. After some weeks, he found an easy version of *The Empire Strikes Back* that he was interested in reading. When he was reading he tried to implement the new strategies he was being taught. David was not learned helpless.

As a result of his belief in the effectiveness of the sounding strategies, David used the sounding strategy for over 50% of all his miscues and nearly 75% his miscues of two syllables or more. The increase in his self-corrections for the sounding strategy through the course of the programme showed his increasing ability to use metacognitive monitoring strategies and letter information more effectively. As a result of his belief in his individual strategies, David was learning to use his individualised strategies to read accurately without recourse to resounding and rereading. As a result of his consistent practise of his individual strategies, David learned to access the meaning of each sentence as he read it. Contextual meaning was therefore more available as a cue for word recognition. .

His increasing non-word reading scores showed his increasing letter-sound knowledge. But his difficulties with phonological processing were evident in the loss of his initial gain in recognising rhymes and his lack of improvement in phonological processing. He improved his vocabulary knowledge from the upper end of the high average range to the upper end of the moderately high range.

As a result of his fairly consistent use of the sounding strategy, his improving letter-sound knowledge and his increasing ability to comprehend the meaning of the sentence as he read, David made gains in his Neale scores of 18 age equivalent months by week 24 of the programme. This was accelerated progress. The effectiveness of David's reading behaviours was also evident in his continually improving uncorrected strategy running record percentage accuracy scores until week 18.

But his Burt scores for reading words in isolation showed only a six-month improvement by week 24. These Burt week 24 scores were two age equivalent years behind his Neale scores. The difference in these scores showed that David was heavily dependent on meaning for word recognition. The increasing number of meaning strategy miscues up until week 18 was perhaps an indication of his increasing attempts to use contextual meaning without resounding and rereading and also of the difficulty he experienced in integrating contextual meaning with the letter-sound information.

Unfortunately, in 1999 David joined a School Certificate History class. He could not keep up with copying the material on the board. He also became the victim of bullying behaviour. These events produced severe emotional tension. This emotional tension appeared to make the integration of meaning and letter-sound information even more difficult for David. The effects on David's reading achievement were very evident in the drop in David's strategy accuracy uncorrected scores from week 19. Although David did show improvement in 1999, he did not again achieve the levels of accuracy he was attaining in those first two weeks of term.

The effects of periods of tension on David's reading achievement were also apparent in the lowering of some of David's Neale age equivalent scores in weeks 6 and 34 and his fluency running record accuracy scores in weeks 3 to 6 and 31 and 32. Apart for David's unfortunate experience in attempting to join a School Certificate class, episodes of tension that were severe enough to interfere with David's progress resulted from other periods of playground victimisation. His frustration that the programme was finishing and he still could not read proficiently contributed to his tension in the final two weeks.

To summarise, as a result of the programme, David's beliefs about his ability became more positive. He believed the phonological processing skills, the letter-sound information and the strategies both the programme strategies and his individual strategies were effective. He was not learned helpless. As a result of his beliefs, he changed his reading behaviours. He learned the consonant blends and phonograms at home. He made gains in his letter-sound knowledge He changed his reading behaviours. He showed progress in adopting his personal strategies to reduce his dysfunctional repetitive strategy use. His reading became more fluent. He used the sounding strategy more often for two and three syllable miscues. His progress, as a result of his changed reading behaviours, was apparent in his increasing strategy running record uncorrected accuracy scores until week 18 and his increasing Neale scores until week 24 of the programme.

However, severe emotional tension impinged on David's progress. Its effect was most evident in the downturn of David's strategy running record uncorrected accuracy scores in week 19 of the programme and in the drop in his Neale age equivalent scores in week 34. Its effect was also apparent in his fluency running record accuracy scores.

These results show that David was capable of accelerated progress when his tuition was appropriately focussed and he was not experiencing emotional stress. But one year in this programme was not enough. He required time to learn the consonant blends and phonograms until they were automatic and time to continue practising his new strategies. He also required very careful

management of his classroom and playground environments to produce an atmosphere that was fully supportive, in order that he might consistently build on his hard won gains.

CHAPTER 10

Similarities and Singularities

The six case studies reported in this thesis have many attributes in common. There were similarities in the underlying difficulties that contributed to each student's reading disability and several of the students had deficits in their language as a result of the restricted amount of text they had read. These deficits contributed to their current word recognition difficulties All the students had a common pattern of strategy use apparently as a result of their previous teaching. Each student's achievement in word recognition, as a result of the teaching programme, appeared to result from their self-beliefs about their ability to decipher words and about the strategies they used. This chapter discusses the similarities and differences between the case studies in terms of these three themes. The concluding chapter, Chapter 11, discusses the contribution that the results of this study make to the understanding of the characteristics of severe reading disability and its remediation and concludes with suggestions for future research.

Word Recognition and Language Difficulties

Many correlational studies have shown a causal relationship between a child's phonological processing abilities, their consequent ability to learn letter-sound knowledge and thus their progress in reading (Bradley & Bryant, 1983; Brady, 1997; Gillon & Dodd, 1997; National Reading Panel, 2000; Stanovich, 1986, 1988; Torgesen, Wagner, & Rashotte, 1997). All six students in this study showed difficulties with recognising the phonemes in words, breaking a word into its phonemes and severe difficulties with the manipulation of phonemes (see Table 10.1). Non-word reading is regarded as a good test of letter-sound knowledge. In this study, Garth had difficulty and the other five participants, Mark, John, Susan Tom and David had severe difficulty with non-word reading (see Table 10.1). It appears that the difficulties all six students had with phonological processing had contributed to their difficulties with learning the letter-sound correspondences necessary for good progress in reading.

In addition to their phonological processing problems, each student had further observable difficulties, which were likely to have been contributing to their reading problems. Garth, Susan, Tom and David showed occasional, but persistent, visual processing difficulties involving letter orientation and the order of letters in words (see Table 10.1). The persistence of these difficulties, throughout the length of this study, and after so many years of reading tuition, suggested that, for these students, it was likely there would always be such underlying problems. Problems that were

only occasionally apparent from the student's observable behaviours, but problems that made automaticity in deciphering letter groups extremely difficult to achieve.

Mark and John both had expressive language difficulties. They had consistent pronunciation difficulties as a result of their poor phonological processing. But in addition they had intermittent, inconsistent difficulties with pronouncing words and, even more importantly, finding the words to express their ideas (see Table 10.1). It seems likely that both their consistent and inconsistent difficulties with pronunciation might have made it harder for them to form accurate letter-sound knowledge. Their difficulties with word recall were very likely to have impinged on their ability to predict words from contextual meaning and therefore, perhaps, to recognise a word as they sounded through the letter groups. Such difficulties would have made word recognition a very difficult task for them.

In addition to his phonological and visual processing problems, David found blending the letter-sounds to form words very difficult. This appeared to be a problem area that had been exacerbated by his extensive remedial teaching.

To summarise, all six students had severe difficulties with phonological processing, which were very likely to be a contributing factor in their failure to acquire the necessary letter-sound knowledge for good progress in reading achievement. Other difficulties included the occasional problems Garth, Susan, Tom and David had with letter orientation and order, the inconsistent problems Mark and John had with expressive language problems and the extreme difficulties that David had with blending the letter-sounds to make words.

Language and Matthew Effects

Vocabulary knowledge is thought to be determined by exposure to language. Oral language is not as rich in words that are less frequently used and words that are associated with more difficult concepts. It follows, therefore, that the development of vocabulary is dependent on the amount of reading that a student has done (Nagy & Anderson, 1984). In addition, increased vocabulary knowledge is said to result in improved reading comprehension (Stanovich, 1986). A major influence in the development of reading skills is reading (Nagy, Herman, & Anderson, 1985).

Stanovich (1986) proposed the Matthew effect, where, continual failure in reading results in a lack of exposure to text through slow reading speeds, an inability to read more advanced text and

motivational problems that result in avoidance behaviours. Further, he hypothesised that because of their lack of exposure to the text, failing readers experience ever-increasing areas of difficulty. These areas of difficulty are likely to include vocabulary, language proficiency, and a severely reduced general knowledge base.

Table 10.1. Strengths and Difficulties that that were likely to have affected each student's progress in word recognition

STRENGTHS AND DIFFICULTIES	GARTH	MARK	JOHN	SUSAN	TOM	DAVID
Listening Comprehension PR	71 average	56 average	81 above average	57 average	57 average	83 above average
Rhyme	X					X
Syllable Identification	\	\			\	
Syllable Segmentation	XX		X		\	
Phoneme Identification	X	\	\	X	X	\
Phoneme Segmentation	XX	XX	XX	X	X	\
Phoneme Manipulation	XX	XX	XX	XX	XX	XX
Non-word Reading	X	XX	XX	XX	XX	XX
Visual: Letter Orientation	X			X	X	X
Visual: Letter Order	X			X	X	X
Vocabulary			X	X	X	
1998 Standard Score PPVT	124	99	89	84	87	112
1999 Standard Score PPVT	124	120	-	105	108	126
Syntax		X	X	X	X	
Word Recall		X	X			
Pronunciation		X	X			
Blending Letter-Sounds						X
Integrating Letter-Sound Information and Meaning	X	X	X	X	X	X
Rapid Automatic Naming	X	X				

Note: Peabody Picture Vocabulary Test-Revised (PPVT-R) standard scores are given. Progressive Achievement Test of Listening Comprehension percentile ranks (PR) are given. QUIL scores for rhyme, syllable and phoneme Range of scores 0-12; \ = 8-10; X = 5-7; XX = 0-4. Non-word reading scores: Range of scores = 0-24; X = 7-12; XX = 0-6. For all other difficulties, X = a difficulty was evident in the teaching programme.

This suggestion is supported by studies that have shown strong and reliable differences in vocabulary and other semantic knowledge between groups of normally achieving students and groups of students with reading disabilities. But such differences have only been apparent for adolescent aged students

and not for elementary aged children (Vellutino, Scanlon, & Sipay, 1997). Vellutino et al. cautioned that language problems such as comprehending sentences with a more complex grammatical structure, processing for syntax and using the contextual language for word identification might result from problems with phonological processing.

Mark, Susan, Tom and David had all made significant increases in their vocabulary by the end of the reading programme. As Stanovich (1986) had predicted, the development of their vocabulary had been impaired by their severe difficulties with reading. Their gains were a consequence of the reading that they had engaged in during the programme. Perhaps their active engagement with the text, in order to comprehend contextual meaning to cue words along with working to comprehend the overall message of the text, resulted in this progress. That David made such progress despite being encouraged to read very simple text supports this contention.

Mark, John, Tom and Susan had additional language difficulties. They all used incorrect syntax when they read. It appears that their difficulties with phonological processing may have impinged on their ability to hear the correct syntax in speech. (Vellutino et al., 1997). Their very poor word recognition skills and difficulties with reading accuracy would have prevented them from correcting their mistaken impressions through exposure to accurate syntax in text. Thus, in a reciprocal relationship, their poor syntax increased their miscue rate and their high miscue rate and limited exposure to text prevented them from correcting their poor syntax.

These four students also had difficulty constructing complex sentences. Their difficulties with complex sentences were particularly related to their inability to use conjunctions. This was a further language deficit, which had apparently arisen as a result of the students' lack of exposure to text. Susan, who read many books in the course of the programme, improved her knowledge of sentence construction, perhaps through her increased exposure to text.

Garth and David came from homes with middle class values about education. They entered the programme with moderately high and high average vocabulary scores respectively and without difficulties in syntax or sentence construction. It appeared that the oral language support available in their homes had compensated for the loss of exposure to language as a result of their reading disability.

Low vocabulary knowledge also affects reading and listening comprehension (Stanovich, 1986). Therefore, all the students, except Garth, were likely to have had lowered reading comprehension as a result of their reading deficits. But Susan, Tom and David had difficulties that impacted more

severely on their progress. Susan had not learned to silent read with comprehension before the programme. Tom complained that he did not understand what he read although he usually appeared to follow the story line. David had difficulty obtaining the meaning of groups of words and sentences as he read.

To summarise, all the students had phonological processing difficulties and difficulties with letter-sound knowledge. Four of the students had additional visual difficulties with letter orientation and letter-order. Two had expressive language problems with inconsistent pronunciation difficulties and word recall. These difficulties had severely impeded their progress in word recognition.

In addition, as consequence of their lack of exposure to text, all except Garth had secondary language deficits in areas such as vocabulary knowledge, syntactical knowledge and reading comprehension. These deficits had arisen as a consequence of their extreme difficulties with word recognition and consequent lack of exposure to text. By reducing the students' ability to use the meaning and syntax cues, these secondary language deficits, made word recognition more difficult,

Strategies

Reading, for all six students, was characterised by the continual use of inaccurate and incomplete letter-sound information and very high self-correction rates. The two preferred strategies the students used were the initial-letter strategy and the sounding strategy. They used the initial-letter strategy for between a third and a half of words of one syllable and increasingly smaller proportions of their two, three and four plus five syllable miscues. They preferentially used the sounding strategy for words of two or more syllables (see Table 10.2).

The characteristics of the initial-letter strategy show that, when the students used this strategy, the miscue was typically a real word with the same initial letter and a similar appearance to the text word. These miscues often had contextual meaning in the sentence (Table 10.2). There were individual differences in this pattern between the students. For example, less than half of John's miscues had contextual meaning. In contrast most of David's miscues had contextual meaning but only half had a similar appearance to the text word.

Garth explained his high miscue rate as follows:

> *My eyes are going across the words too quickly.*

Table 10.2. Comparison of the students' sounding and initial-letter strategy use.

	GARTH	MARK	JOHN	SUSAN	TOM	DAVID
% MEAN USE						
Sounding: 1998	34	47	52	41	55	54
Sounding 1999	39	53	---	57	57	54
Initial-Letter: 1998	35	39	29	41	31	28
Initial-Letter: 1999	39	34	---	31	31	29
% SELF-CORRECTION						
Sounding: 1998	67	46	54	39	56	68
Sounding: 1999	62	58	---	50	50	88
Initial-Letter: 1998	39	22	41	23	31	49
Initial-Letter: 1999	35	30	---	31	26	61
% MISCUE CHARACTERISTICS						
Sounding: real word	48	30	23	31	39	31
Sounding: similar word	41	22	22	21	25	22
Sounding: meaning in context	24	14	12	14	13	15
Initial-Letter: real word	97	97	83	98	97	100
Initial-Letter: similar word	79	82	82	72	65	52
Initial-Letter: meaning in context	59	70	40	71	57	93
WORD LENGTH in SYLLABLES						
Sounding: % 1 syllable	12	22	32	20	36	32
Sounding: % 2 syllable	47	55	60	58	67	72
Sounding: % 3 syllable	61	76	66	75	68	82
Sounding: % 4 & 5 syllable	65	88	63	77	87	91
Initial-Letter: % 1 syllable	54	52	42	49	41	37
Initial Letter: % 2 syllable	32	37	33	36	28	22
Initial Letter: % 3 Syllable	12	22		22	25	10
Initial-Letter: % 4 & 5 syllable		8		19	4	9

The following perceptive description of the difficulties he experienced when reading was given by an adult, Len. He was not involved in this study but he had very severe difficulties with word recognition. His description appears to provide a good explanation of the reading behaviours involved in the initial-letter strategy that the students in this study used.

I don't know whether it's my eyes or not because I'll only pick it (the miscue) *up if the sentence doesn't make sense. If it doesn't make sense, I'll go back to find the word I made a mistake on. The mistake it's obviously a word that's not the right word. It sounds like the right word and looks the same but if I check the sounds in the word I'll realise the word I've put in I've made it up. It just came into my head from the meaning of the story --- I'm right with the first two or three letters. I'm not following right through. I'm just concentrating on the first few letters and then I'll make the word up. Sometimes I do it with words I know like 'the' and 'then'. I'll only pick it up if it's not making*

sense. --- I'm not looking at the middle of the word. I'm looking at the beginning and the end like 'raiding' and 'riding' (miscue in context: "who had led the raiding/riding party). *I've picked that up from the meaning of the sentence --- I'm trying to slow myself down and really look at the letters but then I lose the flow of the story.*

(Len aged 40+)

Both Garth and Len attributed their word recognition difficulties to visual processing problems. Although their attribution of their difficulties to visual processing is unlikely to described their processing difficulties, both students were describing, in their own way, their inability to process letter information accurately as they read. Phonological processing and resultant letter-sound difficulties do not seem to completely account for the continuous inaccurate and inconsistent word recognition Garth and Len described, and all six students exhibited, even when reading one syllable, frequently occurring words that they had often read accurately before.

Experimental work (Lovegrove, 2000) has shown that three quarters of individuals with reading disability showed reduced sensitivity to information in their peripheral vision. When the words in a sentence were presented one at a time or with each successive word appearing to the right of its predecessor there were no apparent differences between reading disabled and non-impaired readers. The reading disabled did not appear to have problems when they were required to move their eyes to the right. But when a whole line of print was presented at one time on a screen, the disabled readers miscued more often than non-impaired readers. That is they had problems when they had to integrate print to the right of the centrally presented words they were deciphering. Lovegrove suggested that these results indicate that the reading disabled students with this problem should make more miscues when reading continuous text than they do when reading isolated words.

Apart from an occasional score, all of the students in this study, except Garth, gained higher scores for word recognition when they read Neale text than they did when they read the Burt words in isolation. Using the storyline meaning as an aid to deciphering appeared to outweigh any visual processing difficulty for five of the students participating in this study, if the explanation presented above has substance. It maybe that Garth's results, with his higher Burt scores, can be explained in this way.

But throughout the programme, when the students read journal text, they continued to have a very high miscue rate for high frequency, one syllable words that they had often read correctly. Yet they showed improvement when reading Neale text where difficult words of several syllables occur very regularly. When reading the Neale text, it is likely that the students would have had to focus on each

difficult word. They would have been less likely to have been using peripheral vision for words to the right of these fixations to any great extent. This would not have been so for journal text, where the student had read most of the words many times before. Therefore, difficulties with integrating incoming peripheral information from the right with the stationary centrally presented information from each eye fixation has some appeal as an explanation for the difference in progress recorded for reading Neale and journal text. If, and how such visual difficulties might relate to phonological processing is unclear, but Lovegrove (2000) suggested that the reading disabled have a rapid temporal processing deficit that is responsible for difficulties in both phonological and visual processing.

Difficulties with using accurate and complete letter information were also apparent when all six students used the sounding strategy. Only one quarter to one half of their miscues were real words (Table 10.2). For each student, of the miscues that were real words two thirds or more had a similar appearance to the text word but only half had contextual meaning in their sentence. That is, when the students increased their attention to the letter-sound information, they greatly reduced both their number of miscues that were real words and their use of contextual meaning for their real word miscues. When the students paid more attention to the letter-sound information in the word, they used less contextual meaning information, just as Len described above. They experienced great difficulty integrating letter-sound information with contextual meaning for accurate word recognition.

The students had a high rate of self-correction (see Table 10.2). This was particularly evident for the sounding strategy where with the exception of Susan the students self-corrected half or more of their sounded miscues. Because these miscues were often not real words or lacked contextual meaning, the students were aware that they had miscued and had another attempt.

In contrast when the students miscued using the initial-letter strategy they were less likely to self-correct. As their miscues were often real words, with a similar appearance to the text word and contextual meaning in their sentence the students had no means of perceiving that they had miscued.

From these results it can be seen that the students were attempting to use the cognitive strategies they had been taught in their school reading programmes, both their sounding strategies and their whole language strategies. Their high self-correction rates show that they were attempting to monitor their deciphering attempts metacognitively for miscues. Wong (1991) suggested that reading disability students do use metacognitive strategies but, because their experience in reading differs from that of normally developing readers, they do not develop the sophistication of strategies that the non-reading

disabled exhibit. Their high miscue rates, the characteristics of their miscues and the difference in their self-correction rates between the sounding and initial-letter strategies showed that the difficulties these students had were not with their attempts to use reading strategies. Instead it was their inability to completely and accurately read letter-sound information and to integrate complete and accurate letter information with contextual meaning that limited their use of both cognitive and metacognitive strategies.

Summary of Miscue Analysis Results

To summarise, the results of this miscue analysis show that the students in this study had a great deal of difficulty with accurately deciphering the letter-sound information, even of one syllable, high frequency words that they had read correctly many times before. But their difficulties were more profound than this. When they attempted to pay more attention to the letter information, they showed increased difficulty with integrating the contextual meaning of the text with the letter information to aid them in word recognition.

Further from these results, it can be seen that when the students used the initial-letter strategy they were using the strategies they had been taught in their school reading programme but with inaccurate and incomplete letter-sound information. When they used the sounding strategy, they were attempting to apply the letter-sound knowledge they knew, but their attempts were inaccurate. All six students actively used the strategies they had been taught. In addition, their high self-correction rates for the sounding strategy showed that they did monitor their deciphering for miscues. Their lowered self-correction rates for the initial-letter strategy showed that their attempts at monitoring were impeded by their inability to decipher the letter-sound information accurately particularly if the miscue appeared to them to make sense in the sentence.

The students difficulties with word recognition arose out of their problems with perceiving accurate letter-sound information and their difficulties with integrating the meaning cue when they attempted to pay more attention to this letter-sound information. Their difficulties with effectively using the strategies they had been taught arose from these difficulties with letter-sound and contextual meaning information rather than with using strategies. Teaching strategies to apply letter-sound knowledge and strategies to integrate letter-sound information with contextual meaning is therefore seen to be a successful way forward in remediating the difficulties with word recognition that these students experience.

Self-Beliefs for Accelerated Progress

Garth, John and Mark

Garth, John and Mark were mastery oriented learners. They held beliefs that ranged from slightly optimistic to very optimistic about their ability to read (see Table 10.3). Their positive self-efficacy judgements about their ability to read allowed them to tackle very difficult text (see Table 10.4). They were, therefore, enabled to read text that was appropriate for their intellectual level.

Table 10.3: The students' self-efficacy to read their self-rated 'easy to read' Neale passages.

	Date	Neale Level	Percentage Accuracy	Can Read Page/ Can't Read Page	Easy to Read/ Hard to Read
Garth	24.6.98	3	86	2	2
	13.7.99	6	91	2	2
Mark	24.6.98	4	82	2	3
	13.7.99	4	95	2	4
John	24.6.98	4	81	2	3
		John became severely depressed and left the programme.			
Susan	24.6.98	2	100	2	3
	13.7.99	5	88	1	1
Tom	24.6.98	3	86	3	3
	13.7.99	2	100	1	2
David	25.6.98	4	Ceiling Level 3	2	4
	13.7.99	2	96	2	1

Note: The student self-ratings at the beginning and the end of the programme are measured on a 1-5 scale. 1 = I can read the page without help; 1 = the passage is easy to read. The passages are from the Neale Diagnostic Tutor. The percentage accuracy scores were obtained from the students' reading of a Neale Form 1 or Form 2 passage at the equivalent level.

At the beginning of the programme (see Table 10.5), they believed that they both knew the best ways to read and worked hard to decipher half or more of the difficult words, but also that they guessed half or more of them. But they believed in the effectiveness of the letter-sound knowledge and the sounding strategies that they were being taught in the programme. By the end of the programme, Garth and Mark thought they always knew the best ways to read difficult words, always worked hard to decipher the words and never guessed. (A second set of results was not obtained for John as he had

left the programme). All three described the sounding strategy when they described how they deciphered difficult words.

Table 10.4. The students' self-beliefs about their reading ability.

	DATE	SCHOOL YEAR	SILENT READING	ORAL READING	COMPREHENSION	SPEED OF READING
GARTH	22.6.98	9	4	2	3	4
	15.2.99	10	2	3	1	3
	13.7.99		2	1	1	3
MARK	22.6.98	10	3	4	2	4
	15.2.99	11	2	3	1	3
	13.7.99		3	4	1	4
JOHN	22.6.98	9	2	3	3	3
	15.2.99	10	2	4	3	4
			John became severely depressed and ceased to attend the programme.			
SUSAN	22.6.98	10	4	3	4	4
	15.2.99	11	1	3	1	2
	13.7.99		1	2	1	2
TOM	22.6.98	9.	3	3	4	5
	15.2.99	10	4	4	4	5
	13.7.99		4	4	4	5
DAVID	22.6.98	10	4	5	3	5
	15.2.99	11	4	5	1	4
	13.7.99		3	4	1	3

Note: The students' self-beliefs are measured on a 1 – 5 scale. 1 = high ability.

Because of their beliefs about their ability to read and the effectiveness of the sounding strategies they were being taught, Garth, Mark and John consistently practised applying the sounding strategy to difficult words. They were persistent in their efforts to decipher difficult words.

As a result of their increasingly consistent and their persistent practice at using the sounding strategy, the Neale and Burt scores for all three showed accelerated progress of between two and three years when they finished the programme. These tests measured the student's increasing ability to decipher words with an increasing number of syllables containing less frequently encountered letter groups (see Figures 10.1 and 10.2).

Their positive self-efficacy judgements about their ability to read difficult text enabled Garth and John to read independently at home. John also learned his letter-sound knowledge and his strategies

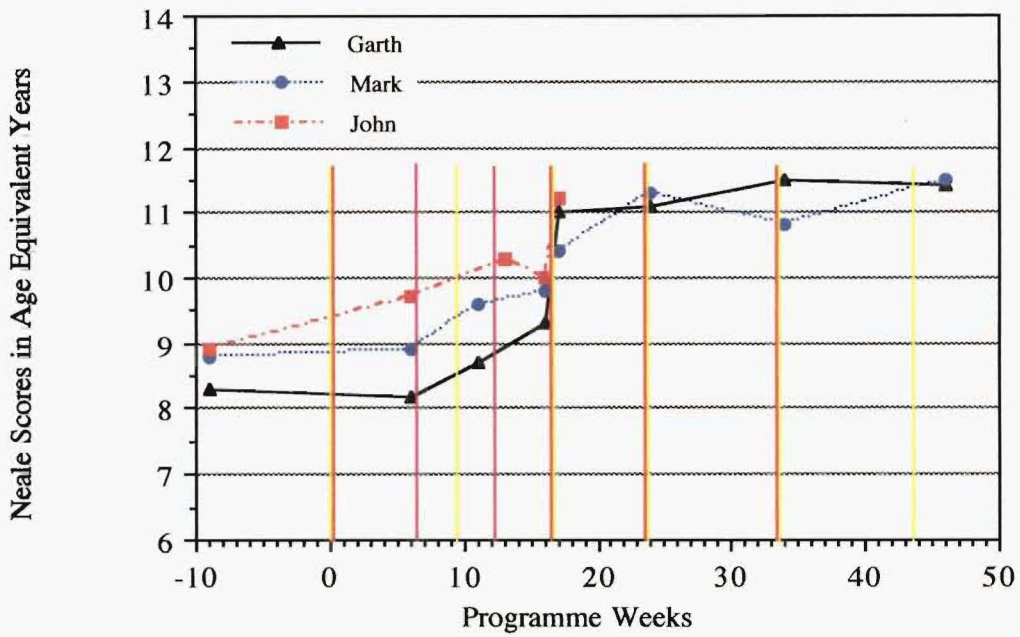

Figure 10.1. A comparison of Garth, Mark and John's Neale age equivalent scores.

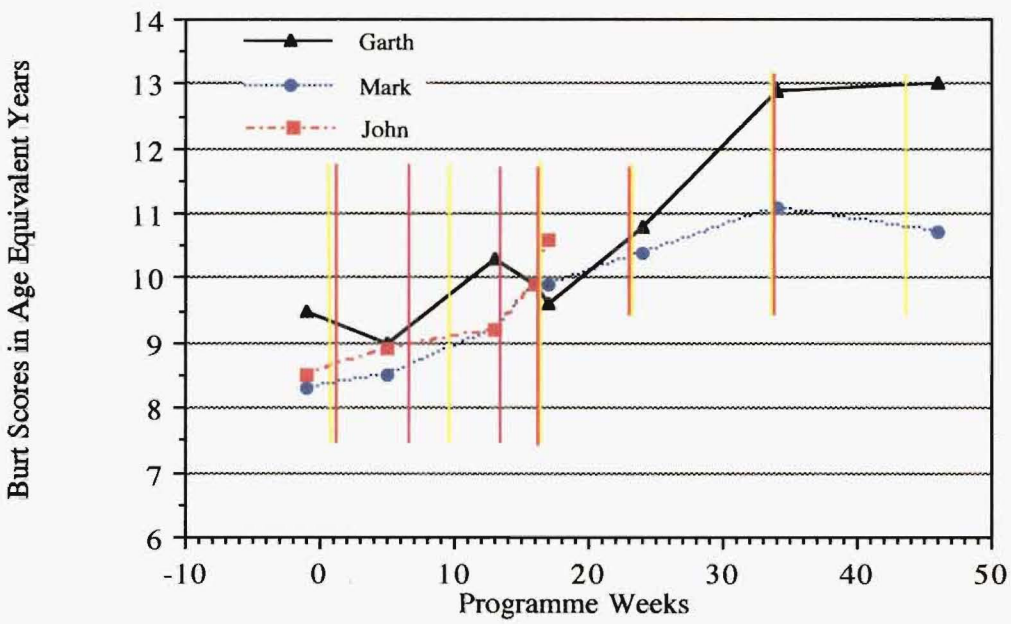

Figure 10.2. A comparison of Garth, Mark and John's Burt age equivalent scores.

at home. Garth and John learned to metacognitively monitor their word recognition for miscues. If they perceived that their initial word recognition attempt was unsuccessful, both of these students learned the flexibility to change their strategy use. They learned to use all the strategies they were taught. As a result of their beliefs and consequent behaviours, Garth and John showed the highest achievement gains. Garth's was three age equivalent years in a year and John's was two to two and half age equivalent years by the beginning of 1999 before he dropped out of the programmes as a result of severe depression.

Mark's pattern included the dysfunctional belief that he could not detect his miscues. Therefore, he did not metacognitively monitor his sounding efforts and apply a different strategy if he was not initially successful. As a result of his negative belief, he did not learn or apply the full range of sounding strategies. Yet his success in word recognition achievement made it unlikely that he would perceive a need to change his learned helpless behaviours. These, in turn, would limit his progress in word recognition both through his inability to detect his miscues and because they resulted in further avoidance behaviours. For example, Mark did not read difficult text independently at home.

Table 10.5. The students' beliefs about their reading of a passage they had rated as easy-to-read

	DATE	NEALE LEVEL	ESTIMATED PERCENTAGE ACCURACY	KNOW: DON'T KNOW	GUESS: DON'T GUESS	TRY: DON'T TRY
GARTH	24.6.98	3	86	3	3	2
	13.7.99	6	91	1	5	1
MARK	24.6.98	4	82	2	2	3
	13.7.99	4	95	1	5	1
JOHN	24.6.98	4	81	3	3	1
	13.7.99		John left the programme with severe depression			
SUSAN	24.6.98	2	100	2	2	5
	13.7.99	5	88	1	5	1
TOM	24.6.98	3	86	2	3	3
	13.7.99	2	100	2	5	1
DAVID	25.6.98	4	Ceiling Level 3	3	4	1
	13.7.99	2	96	1	5	1

Note: The student self-ratings are measured on a 1-5 scale at the beginning and end of the programme. 1 = know; 1 =guess; 1 = try. The passages are from the Neale Diagnostic Tutor. The percentage accuracy scores were obtained from the students' reading of Neale Form 1 or 2 passages at the equivalent level.

That is, the mastery oriented learners had positive beliefs about their ability to read and believed in the effectiveness of the strategies they were being taught. As a result of these beliefs, they consistently applied the strategies to difficult words and they were persistent in their use of strategies with each word. With their persistent practice of these reading behaviours, they made accelerated progress in word recognition. The students who made the highest gains metacognitively monitored their word recognition and had the flexibility to change strategy use if their initial attempts were not successful.

Self-Beliefs and Behaviours for Limited Achievement

Susan, Tom and David had patterns of beliefs that limited their progress. But these were not the generalised patterns of beliefs depicted in the literature (Licht & Kistner, 1986; Stipek, 1993). Instead, each of these students had their own individual pattern of dysfunctional beliefs.

Susan

Susan entered the programme unable to comprehend as she read silently. For her, silent reading was a meaningless task. She believed she was below average in silent reading ability (see Table 10.3). She began to change her beliefs when she learned to silent read with comprehension in week seven. As a result of her success at reading books containing several chapters, she began to believe that, for silent reading, she was one of the better readers in the school (see Table 10.3). She also believed that the sounding strategy was not effective, she did not have the ability to use it and it interfered with her comprehension of the story line. As a result of these beliefs, she came to think that there was no need for her to learn to apply the sounding strategy. She often skipped words. Because she did not practice the strategy her progress in word recognition was limited. Although an avid reader, she was learned helpless at applying strategies for word recognition.

However, when in 1999, she failed in her attempt to join a School Certificate English class as a result of her difficulties with reading, she did not change her stated beliefs but a change in her beliefs about using the sounding strategy was evident in her changed reading behaviours. Although she continued to believe, that for silent reading, she was one of the better readers in the school, she became more consistent at her attempts at sounding difficult words (see Figure 7.8) and more persistent in her attempts with each difficult word. Unfortunately, her frequent absences in 1999 limited her progress and her changed reading behaviours were not reflected in an increased rate of gain in her Neale and Burt scores. Her achievement gain was one age equivalent year in a year (see Figures 10.3 and 10.4).

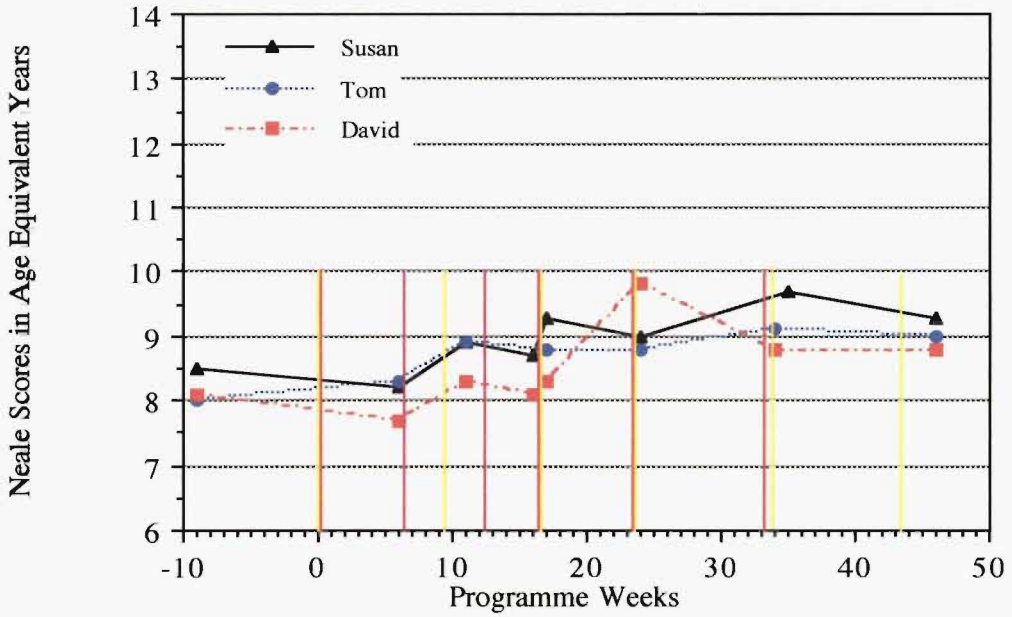

Figure 10.3. A comparison of Susan, Tom And David's Neale age equivalent scores.

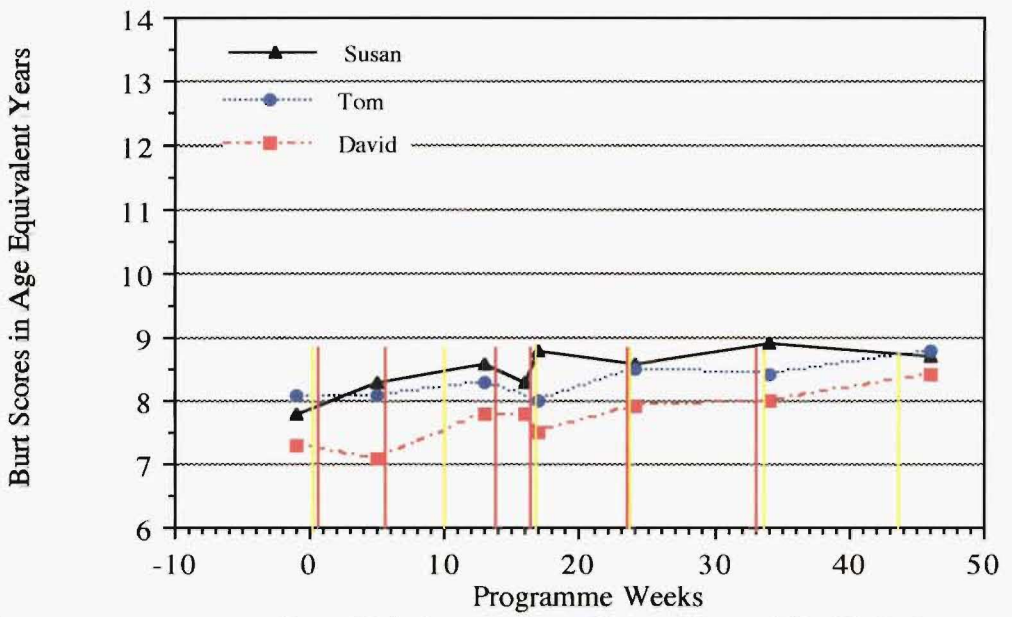

Figure 10.4. A comparison of Susan, Tom and David's Burt age equivalent scores.

Tom

When Tom entered the programme, his beliefs about his reading ability were slightly optimistic to optimistic except for his belief about his speed of reading which was realistic (see Table 10.3). Tom frequently stated that he could not understand what he read. For him, reading was a meaningless activity where he had extreme difficulty deciphering the words and comprehending what he had read. He externalised his failure. It was the task, reading, that was dumb and not he. He used this belief to justify his extensive repertoire of avoidance behaviours. If the task is dumb, why do it? He avoided reading. Although he often used the sounding strategy in an initial attempt, he was not persistent if he did not find the text word on his first attempt. He was learned helpless.

But two factors were influential in changing his self-beliefs and behaviours. When stories were found that were humorous, interesting and stimulating, he perceived that reading could be a task with value. He lessened his avoidance behaviours. Second, Tom was a performance oriented learner. In his last lessons in 1999, he experienced a developing perception that his reading was improving in the classroom. He attributed this improvement to sounding out the vowel sounds. As a consequence of these beliefs, he became more persistent in his attempts at sounding words. At the end of 1999, he showed he was capable of the flexibility necessary to change the vowel sound in a word if his initial effort at sounding was unsuccessful. But his change in reading behaviours was too late in the programme to result in an increased rate of gain in his word recognition scores (see Figure 10.3 and 10.4). His Neale score showed a gain of one age equivalent year and his Burt scores showed a gain of three age equivalent months at the end of the programme. His increasing language and word recognition proficiency were evident in his increasing and less variable reading accuracy scores for the fluency running record.

David

David was highly intrinsically motivated to read Star Trek magazines, which were for him extremely difficult to decipher. When he entered the programme, he was attempting to read these in his spare time at home. David had a realistic belief about his oral reading and speed of reading and only a slightly optimistic belief about his silent reading (see Table 10.3). But despite his negative judgements about his ability to read, he was not learned helpless. Instead, he had developed an overly high belief in the effectiveness of the sounding strategy and the rereading-a-sentence strategy. As a result of his experience in trying to decipher such difficult text, he believed that given enough time he could decipher most of the words. But his repetitive overuse of these strategies prevented him from becoming more fluent in his reading.

Because he was not learned helpless, he learned the programme consonant blends and phonograms at home. He found a very easy-to-read book, which he was interested in reading. He practised using his individualised strategies to overcome his repetitive behaviours. The accelerated progress he made as a result of his new reading strategies and knowledge is evident in his week 24 Neale score (see Figure 10.3) and especially in his uncorrected strategy running record scores until early 1999 (see Figure 10.5).

Unfortunately, in 1999 as a result of playground victimisation and an inability to cope with the demands of a fifth form School Certificate class, David became extremely tense. As a result, much of his hard won reading achievement was lost (see Figures 10.3 and 10.5). By the end of the programme, his Neale and Burt scores showed only a six months gain.

Several important points emerge from these three stories:

- The three dysfunctional patterns of beliefs resulted in the ineffective application of the sounding strategy and, for Susan and Tom, avoidance behaviours. As a result, the students made gains of only one age equivalent year or less during the teaching programme.

- Susan and Tom changed their self-beliefs as a result of their individual combinations of their authentic school experiences, their self-ratings of their reading performance compared with their peers in their class and their perception of the value of the task, rather than as a result of the teaching persuasion in the programme.

- Susan and Tom changed their reading behaviours as a result of the changes in their self-beliefs. They came to believe in the effectiveness of the programme taught strategies and changed their reading behaviours to use them.

- There was insufficient time in this year long programme for the changes Susan and Tom made in their reading behaviours to show in increased rates of achievement in word recognition. The programme needed to be long enough for the changes in self-beliefs to occur, long enough for the resultant changes in behaviours and, finally, long enough for the changes in reading behaviours to effect changes in word recognition rate of achievement.

- David changed his reading behaviours in accordance to the programme teaching he received. He was not learned helpless. He believed in the value of reading and in the effectiveness of the knowledge and strategies he was being taught. His accelerated gains in his reading achievement reflected his changed reading behaviours until severe emotional tension negated the effects.

- Many other exigencies in the lives of these students affected their word recognition achievement. These factors included lost teaching time on account of school occurrences, illness, inappropriate class placements, playground victimisation and depression.

Assessment of Progress in Word Recognition

The Neale and Burt provided good assessment of the word recognition achievement that the six students in this study made as a result of this teaching programme. They measured the students' increasing ability to use the sounding strategy to decipher.

The two running record assessments used New Zealand school journal text which is characterised by fairly rich contextual meaning and a large number of one and two syllable words for which the students used the initial-letter strategy. These running record assessments recorded the continuing inaccurate and inconsistent reading associated with the initial letter strategy. They showed that the programme, with a few exceptions (David's 1998 and Garth and Mark's 1999 strategy series along with Tom's 1999 fluency series running records), failed to change the very inaccurate and highly variable accuracy associated with the students' use of this strategy.

However, the miscue analysis for the sounding strategy running record did show that all the students except Tom were increasing their use of the sounding strategy for difficult words as the programme progressed. This behaviour change showed that the students were developing an increasing belief in the effectiveness of their newly learned letter information and strategies for improving their word recognition. Tom already was fairly consistent with his use of this strategy for his initial attempt to decipher a word, as a result of his previous private reading tuition.

These results show that both types of assessment are necessary to obtain a full picture of a student's progress in word recognition.

Influences on Self-Beliefs

The results of this study show that the pattern of reading self-beliefs that each student held determined their gains in word recognition achievement through the effect they had on each student's reading behaviours. Important influences on the pattern of self-beliefs held by each student included first, factors which affected their intrinsic and their internalised extrinsic motivation, second, their

authentic classroom experiences and their ratings of their progress against that of their classmates and third, their physiological state.

Intrinsic and Internalised Extrinsic Motivation

All six students in this study had a strong expectation that they would read material that they found interesting, stimulating and enjoyable. Every endeavour was put into finding suitable text. Garth, Mark and John tried to read very difficult text. Susan became intrinsically motivated to read books by particular authors that she enjoyed. She became an avid reader. Tom lessened his avoidance behaviours when stories were found that contained subject matter, humour and a level of language he perceived to be interesting and enjoyable. David only began to read simpler text when a book was found that he was interested in reading. All the students only engaged with the programme teaching when they were reading material that they found intrinsically motivating.

When suitable text had been chosen, they (with the exception of David) perceived that they were engaged in adult reading, that they (including David) could comprehend what they were reading and that there was a teacher expectation that they would become successful at reading these books independently. The students were, therefore, likely to have developed internalised extrinsic motivation to read these books.

Their internalised extrinsic motivation that arose out of these perceptions would have reinforced the internalised extrinsic motivation that they had already developed as a consequence of their parents or guardians beliefs about the importance of reading. When they were interviewed, the parents or guardians of the students all stated that they regarded reading as a necessary skill for employment. Some thought it was also valuable as a general life skill for gathering general information or, more specifically, for obtaining a driver's licence. All the students, including Tom, reflected their parent's beliefs at the beginning of the programme and said that they thought it was important to be a good reader as an adult. For these students, reading had attainment and utility value (Wigfield, 1994). But Tom's actions belied his words!

The Students' Authentic Classroom Experiences and Comparisons with Their Peer Group

Unlike young children, who see their academic achievements in terms of the effort they have expended, students from the age of 11 or 12 years learn to differentiate between ability, effort and

outcome. They learn to perceive their ability in relation to that of others. Adolescents judge their ability by comparing both their performance and the effort they expend with that of their peers. An above average ability self-rating requires success on tasks that others could not successfully complete. In addition, the more effort or time required to achieve an equivalent result, the lower the evaluation of ability (Nicholls, 1984; Stipek, 1993).

It seems reasonable to assume that the six students in this study, although asked to rate themselves in relation to all the other students in their cohort, in fact rated themselves in comparison with their class mates and perhaps some friends and family. At the beginning of the programme, all six students were members of special needs classes where the literacy level was pitched at a ten-year age equivalent level. The six students from this study were in these classes because of their difficulties with word recognition. As they possessed listening comprehension scores that were above the mean for their age, they were likely to be achieving well in comparison to their classmates. Hence the slightly optimistic to very optimistic self-ratings listed in Table 10.3.

Garth, Mark and Susan all recorded more positive self-ratings of their reading ability at the beginning of 1999. These improved self-ratings appeared to be as a consequence of their perception that their reading ability had improved in comparison with their classmates. Mark's self-ratings, except for reading comprehension, had regressed again by the end of the programme, apparently as a result of his self-ratings in comparison with his School Certificate classmates. His comprehension self-rating remained high as, for this, he was receiving subject teacher feedback that he was achieving as well as his classmates.

Tom's self-ratings of his ability became more negative in 1998 and remained so until the end of the programme He recognised his lack of progress. Rather than attributing this to his avoidance behaviours and lack of effort, he attributed it to lack of ability, the very attribution he sought to avoid. His more positive self-ratings a term after the programme finished reflected his belief that he was able to read more in class.

Bandura (1986) considered that the self-judgements that students make about their successes and failures in performing authentic tasks exert the most powerful influence on their self-beliefs and their self-efficacy judgements. In this study, authentic experience and comparison with classmates appeared to overlap. But the following examples of authentic experience occurred as a result of a change in the circumstances of the student. They included Susan's changed beliefs and behaviours when she learned to silent read with comprehension and again when she found she was unable to read at the level required for entry into a School Certificate English class. They included Mark's

change in his self-ratings of his ability to read when he changed from his special needs Year Ten class to Year Eleven School Certificate History and English classes.

Persuasion by myself, the remedial teacher, did not appear to be effective in changing student self-beliefs about their reading ability. However, the students did respond very favourably to statements encouraging them to believe that they had control over their achievement. Such statements carried implicit teacher beliefs in the student's ability to read.

Throughout the programme, the students' achievement gains were made explicit to the student. Therefore, as the programme progressed, the students, including those with dysfunctional beliefs would have perceived that they were making progress. When this reinforcement was combined with their perception that their word recognition was improving in the classroom, all the students except Tom increased their belief that they knew the best ways to read difficult words. All, including Tom, believed in the effectivenss of the strategies they were being taught to enable them to apply their developing letter-sound knowledge. All came to believe that, for text they rated as easy-to-read, they worked hard to decipher words, that is they were consistent and persistent in their efforts. They came to believe they did not guess (see Table 10.5).

The teaching programme did not influence the self-beliefs that contributed to the learned helpless reading behaviours of Susan and Tom. But when events external to the programme changed these self-beliefs, these students changed their reading strategies to incorporate the programme teaching. Neither did the programme teaching change Mark's learned helpless behaviours that resulted from his belief that he could not detect miscues. Instead, his good achievement gains as a result of the programme were likely to have reinforced his belief that he was successful in using the strategies and no event external to the programme occurred to change this belief. In contrast, David was not learned helpless. He changed his reading behaviours as a consequence of the programme teaching.

Physiological State

The physiological state of the student could exert influences that negated the students' changes in reading self-beliefs, their consequent changes in reading behaviours and their resultant gains in reading achievement. David suffered anxiety which on occasions was so severe he could no longer participate effectively in his lessons. The effects of his anxiety were not reflected in David's self-ratings but were reflected in downturns in his reading progress. John made accelerated progress in word recognition until his depression became so severe that he ceased to attend school.

Summary

All six students entered the programme with a range of primary and secondary difficulties. Their word recognition was inconsistent and inaccurate with a high rate of self-corrections and slow reading speeds. The reading strategies they had used for their miscues were usually the initial-letter strategy or the sounding strategy. The programme taught phonological processing, letter-sound knowledge, the sounding strategies and positive ability and reading self-beliefs. As a result of this teaching, all the students except Tom (who already used sounding frequently but without persistence) and David (who did not show an overall increase but did increase his use in 1999 for two and three syllable words) increased their use of the sounding strategy in the strategy running record series. This increase in use reflected their belief that they were being taught an effective strategy for deciphering difficult words.

Accelerated gains in word recognition achievement of two or more age equivalent years were associated with a mastery pattern of self-beliefs and reading behaviours. Gains in word recognition achievement of one age equivalent year or less were associated with dysfunctional patterns of self-beliefs and strategy use or emotional stress. The programme teaching was effective in changing dysfunctional strategy use where there was no pattern of learned helplessness.

This programme taught letter-sound information and the sounding strategy because the students had difficulty using complete and accurate letter information for word recognition. The use of language based cues, contextual meaning and syntax, was also regarded as very important for good word recognition. The characteristics of the letter-sound strategy and the consistency with which the students used this strategy showed that the students had received comprehensive instruction in the use of language based cues in their previous school based reading programmes. But the difficulties all six students experienced with integrating letter-sound information and contextual meaning showed that further instruction was required in the integration of these two cue systems.

Only Garth and John learned and applied the metacognitive monitoring strategies taught in the programme. Monitoring strategy use is a late developing skill (Schunk and Zimmerman, 1996). Therefore it maybe that the other students had not yet developed fully mature metacognitive processing. Or perhaps they were fully engrossed with learning andaplying the cognitive strategies and did not have sufficient memory resources available to learn the monitoring strategies as well.

Three of the students in the programme, Mark, Susan and Tom, had a learned helpless pattern of self-beliefs. The teaching programme was not effective in changing learned helplessness. Two of these

students, Susan and Tom, changed their self-beliefs when their perceptions of task value and classroom experiences made it apparent to them that such a change was necessary. When these two students realised that change was necessary, they adopted the beliefs and reading behaviours taught in the programme, because they believed in the effectiveness of this teaching. Unfortunately, a year was not long enough to allow their changed reading behaviours to effect changes in their word recognition rate of achievement. For one student, Mark, no classroom experience occurred to change his beliefs and he retained his learned helpless behaviour to the end of the programme.

CHAPTER 11

Discussion and Conclusions

Conclusions of the Study

All six students participating in this study had extreme difficulty with word recognition when they entered the programme. They had Neale and Burt scores of less than nine age equivalent years. They found it difficult to decipher words of two or more syllables and often miscued on high frequency words that they had previously read accurately. At the beginning of the reading programme, as a result of their word recognition problems, they were unable to participate in the school curriculum and had consequently been placed in special needs Year Nine and Year Ten classes.

This thesis has revealed much about the characterisation of reading disability from the stories of these students. It has shown that the students' difficulties were at two levels. On one level were the initial problems that contributed to their difficulties with word recognition. In common with the students with deciphering difficulties in many other studies (Bradley & Bryant, 1983; Brady, 1997; Gillon Dodd, 1997; National Reading Panel, 2000; Stanovich, 1986, 1988; Togesen, Wagner & Rashotte, 1997), each of the students had phonological processing problems. In addition, there were occasional but persistent problems with letter orientation and letter order or inconsistent problems with pronunciation and word recall and one student showed extreme difficulty with blending. On a second level, some of the students had difficulties that had arisen as a result of their reading disability. These included a failure to develop their potential in language as a result of their lack of exposure to text (Nagy & Anderson, 1984; Stanovich, 1986; Vellutino, Scanlon & Sipay, 1997) and motivational problems resulting from their many years of severe failure in literacy (Stanovich, 1986; 1988).

The results of an extensive analysis of the strategies each student had used for each miscue have shown that the students used two principal strategies, the initial-letter strategy and the sounding strategy. Both these strategies resulted from the teaching that they had received during their school years. Stanovich (1986; 1988) and Wong (1991) wrote that poorly motivated students can be expected to show metacognitive deficits as a result of lack of experience in reading, and the effect of low motivation on metacogntive processing. However, all six students showed a high rate of self-correction for both strategies and particularly for the sounding strategy for which they found their miscues easier to detect. This high self-correction rate showed that the students did attempt to

monitor their reading for miscues. The results of the miscue analysis showed their extreme difficulty with reading the letter-sound information in words completely and accurately and their difficulty integrating the letter information with contextual meaning. Wong (1991) suggested that, because reading disabled students have a different experience with reading, they do not develop the sophistication of metacognitive strategies that non-reading disabled readers exhibit. The difficulties that the students participating in this study had with using complete and accurate letter information, and integrating this letter information with contextual meaning, limited the effectiveness of the strategies they were attempting to use.

Lovett et al. (2000) concluded from the results of research that the students made better progress when their remedial programme included teaching on sub-syllabic information and the flexible use of strategies. The results of this thesis have confirmed that an effective remedial programme, which teaches to the difficulties that students with severe word recognition difficulties experience, should include phonological processing skills, letter-sound knowledge and the strategies both to apply these skills and knowledge and to monitor their reading for miscues. In such a programme, the students can assume control over their learning and thus their deciphering problems. That giving each student control over their learning is an important factor in remediation (Ryan and Deci, 2000) was confirmed in this study by the students' pleased smiles whenever it was suggested that control of their learning was theirs.

As part of this study, a comprehensive reading programme for adolescents with very poor word recognition achievement but good listening comprehension was developed and implemented. This programme taught phonological processing skills and letter-sound knowledge and strategies to apply the letter-sound knowledge. Students who experience continual failure are less likely to believe that they can change their achievement levels with effort and persistence (Licht and Kistner, 1986). They become learned helpless, which results in reduced and dysfunctional strategy use and metacognitve monitoring (Covington, 1984). For these reasons, as part of the teaching component, the teaching programme encouraged each student to adopt positive self-beliefs about their ability to decipher words, their strategy use and the effort they used to apply their skills, knowledge and strategies.

Because of their many years of reading tuition and failure, the participating students did not have word recognition skills that had been developed step by step to their current achievement level. Instead, the students showed mixed levels of learning, with word recognition skills and knowledge that were more advanced for some words and in some situations and deficient for other words and situations. Inconsistent accuracy was also a feature of their reading. In addition, it was important that the programme recognised the importance of fostering intrinsic motivation (Deci and Ryan, 2000) by

supporting the students to attempt to read challenging and interesting text. In recognition of these characteristics and needs, Vygotsky's zone of proximal development (Grigorenko, 1998) and scaffolding (Wood et al.) were used to support the students as they learned to decipher words in difficult, stimulating text of their own choice.

The teaching programme was effective. The students' Burt and Neale scores showed that the three mastery oriented learners made accelerated progress of two to three years for deciphering unfamiliar and difficult to read words. The remaining three students (Susan, Tom and David) made gains that could be viewed as successful when considered in terms of the gains they had made as a result of all their previous years of tuition. As well as gains in word recognition achievement, the students who held dysfunctional beliefs showed adaptive changes in these beliefs. Two of the students (Susan and Tom), who displayed learned helpless patterns of beliefs adopted a more positive pattern of beliefs and, as a consequence, became more persistent with their strategy use. David worked at changing his dysfunctional use of strategies.

A major finding of this thesis was the extent of the influence that the students' beliefs about their ability to read words, and about their reading behaviours, exerted on their progress. Accelerated gains of two to three years were associated with mastery oriented learning patterns which resulted in the consistent and persistent use of the programme taught letter-sound knowledge and the strategies to apply it. The greatest gains were associated with very positive self-efficacy judgements for reading difficult text and independent reading at home and the flexibility to change strategy use if the first attempt was not successful. More limited progress was associated with learned helpless patterns of self-beliefs or the dysfunctional overuse of strategies.

The thesis has highlighted several implications for remedial teaching arising from the extent of the influence of the students' beliefs about their word recognition ability and behaviours on their achievement. The first is the importance of teaching self-beliefs in terms of the beliefs of each individual student. Even the students with learned helpless reading behaviours showed important differences to the general pattern of low belief in ability and resultant lack of persistence described in the literature (Licht & Kistner, 1986; Stipek 1983). Teaching to this pattern would have reinforced the dysfunctional patterns of beliefs that Susan and David held. The second is the importance of good liaison between the remedial and classroom teacher, in order to effect changes in learned helpless behaviours as a result of their authentic classroom experience (Bandura, 1986) and comparisons with their classmates. The third is the importance of encouraging the students to read high interest, difficult reading materials to foster intrinsic motivation (Deci & Ryan, 2000) and counteract learned helpless behaviour.

Two further considerations were seen to be significant. The remedial programme must be delivered for a sufficient period of time to allow the students with dysfunctional beliefs to make the necessary changes in self-beliefs, the resulting changes in strategy use and, finally, to show an increase in their rate of achievement. For all students, the programme must allow sufficient time for the students to become proficient at using strategies to apply the considerable body of letter-sound knowledge that they must learn in order to become competent at word recognition. Second, progress should be measured on texts with differing characteristics. As this study has reported, reading from different types of text can give very different results about achievement.

Limitations of the Programme

The limitations of the programme were of two kinds: those associated with the complexities of a lower decile, coeducational, secondary school and those associated with the teaching programme.

The school was very supportive of the programme but the complexities of school life impinged on the delivery of the teaching programme in many ways. These included lost lessons due to form meetings, school outings and productions. The teaching in such an environment competed with the many emotional highs the students experienced such as the excitement of school productions, school outings and sex education and the emotional lows that resulted from teasing and school discipline.

Of more concern was the major change in classroom environment all the students were subjected to. In 1998, they had been placed in their special needs classes where the reading age of the curriculum delivered was of a nine to ten age equivalent level. In 1999, they were all mainstreamed into Year Ten or Year Eleven classes. Three of the students experienced entry into School Certificate classes. For two of these three students this was not successful and they experienced some trauma as a result.

The biggest limitation of the teaching programme was the initial focus of the self-belief phase of the programme. This would have been improved with the following amendments:

- An emphasis from the beginning that the students had control of their learning. The students found the emphasis that the programme placed on their ability to succeed boring and repetitive. They had obviously received many such exhortations throughout their schooling.

- Only statements attributing failure in word recognition to using an inappropriate strategy or incorrect use of a strategy should have been used from the beginning of the programme.

- A focus at the beginning of the programme on determining each student's individual pattern of self-beliefs so that the teacher-student conversations about self-beliefs could have been more appropriate at an earlier stage.

There were also limitations in assessment. First, in retrospect, it seems that assessment throughout the programme of the student's letter-sound knowledge for consonants, consonant blends, and phonograms and their ability to blend these to make words and syllables would have provided useful additional information, although it was not the focus of the study. Second, had it been realised that scoring running records as the student read was so very inaccurate, taped recordings would have been used to determine the students' independent and instructional levels of journal text. The level of these texts would then have been more carefully matched to each student's achievement levels.

Future Research

Directions for future research include manipulating the student's classroom experiences in order to remediate learned helplessness, modifications to the programme, using the programme with different groups of students and researching programmes that include group methods and computer programmes.

The students changed their beliefs that had led to their learned helpless behaviour as a result of their classroom experiences. Investigations should be undertaken to determine whether these experiences can be manipulated to achieve more effective results rather than relying on chance events.

The students largely failed to develop their ability to use accurate letter-sound knowledge when reading words of one and two syllables. Investigations of the most effective means to develop this accuracy would be beneficial. Approaches that might be used include:

- Increasing the number of hours of tuition each week. This programme used only three half-hour sessions a week and each student had less than 48 hours of tuition in total.

- Determining if accuracy is developed when this programme is delivered over a longer time frame. The relative merits of more time per week and a longer programme would also be of interest

- Including a spelling component to the course to improve the students' understanding of letter-sound knowledge.

- Incorporating direct instruction teaching for letter-sound knowledge only into the programme without losing the emphasis of this programme on intrinsic motivation, task value and the control of their learning given to the students by the teaching of strategies and self-beliefs.

The participants for this study were carefully selected to have extremely poor word recognition but listening comprehension that was above the mean for their age. The programme was tailored in terms of this selection. But it is recognised that groups of students with differing combinations of word recognition skills and comprehension abilities may have differing needs. Suggested groups include

- low word recognition together with low listening comprehension; and
- less severe word recognition deficits accompanied by listening comprehension scores in a similar range to the participants in this study.

The Adult Literacy Survey states that the majority of Maori, Pacific Islands people and other minority ethnic groups have literacy levels that are below the level considered necessary for participation in normal everyday adult life (New Zealand Ministry of Education, Undated). The development of a range of programmes to support their literacy achievement is important.

It would be useful, therefore, to trial this programme with groups of students having differing characteristics and literacy needs in order to develop a package of programmes that can be successfully matched to differing groups of recipients.

This programme was a one-on-one teaching programme making it expensive in terms of teaching time. Yet each student received the same letter-sound knowledge. They received the same set of strategies, although some had additional personal strategies. It seems that this common knowledge could be successfully taught either as part of their classroom programme or in small groups. However, it is necessary to determine the individual strategies and self-beliefs necessary for each student. These are best determined in a one-to one situation. The student's reading also needs to be heard individually by a teacher who has an extensive knowledge of reading theory. It seems, therefore, that a more cost-effective programme could be developed that included a combination of group and one-on-one teaching. The carefully controlled use of computer teaching programmes might be a useful adjunct for teaching accuracy with letter-sound knowledge.

The students in this study have endured the consequences of ongoing persistent failure. It seems that students with reading disabilities such as theirs would benefit if their teaching included three factors. The first is that remediation of their phonological awareness problems should start at school entry, or perhaps before. The second is that they should receive ongoing tuition in the use of phonological processing, letter-sound knowledge and the strategies until they can quickly and accurately apply them to both familiar and unfamiliar words. The third is that a comprehensive understanding of all the contributing factors leading to reading disability needs to be developed, for only with such understanding can remediation become effectively focused.

With appropriate teaching from the time a child first starts school, it may be possible to prevent the persistent failure that the students in this study have experienced. It may be possible to prevent the ensuing deficits in language and knowledge which result from restricted access to text; possible to prevent debilitating self-beliefs. With such teaching these students would be enabled to participate fully in their school curriculum, to achieve their full academic potential. They would leave school with the prospect of leading productive and satisfying adult lives.

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APPENDIX A

INITIAL INTERVIEW I

Task Value

Reading Self Concept

Expectancy for Success

INITIAL INTERVIEW I

Task Value, Reading Self-Concept, Expectancy for Success

1. What have you chosen to do in your free time after school this week?

---

last weekend?

---

2. What does Dad do (paid, unpaid, hobbies, interests)?

What has he done this week?

---

last weekend?

Is this usual?

What does Mum do (paid, unpaid, hobbies, interests).

What has she done this week?

Last weekend?

Is this usual?

Provide a selection of examples, recipes, manual, magazines, newspaper, chapter books.

What has Dad read this week for work?

---

for information (manuals, recipes, newspapers, gardening, redecorating etc.)?

---

for fun?

What has Mum read this week for work?

---

for information (include recipes, knitting, gardening, newspaper etc.)?

---

for fun?

---

3. What have you read this week?

---

last weekend at home?

---

for information?

---

for fun?

---

words or pictures?

---

this week at school for information?

This week at school for fun?

Is this usual?

On this scale (SEE END OF THIS QUESTIONNAIRRE) show how much you like reading? (*Asked what they had read e.g. most had read the TV guide and then asked to rate items).*

4. Think of the best third form reader you know. Why did you choose that particular person? (*Good at reading or good at everything or??*)?

What can they do as a reader? (*relate to examples of text*)

Think of a third form reader who reads as well as you would like to be able to read. What can they read well enough to do?

What do you need to be able to do as a third form reader?

---

5. Think of a grown-up who is a really good reader. What can this grown-up do with their reading?

Think of a grown up who reads as well as you would like to be able to read when you are grown up. What can they read well enough to do?

What do you need to be able to read well enough to do when you are grown-up?

6a. **On this scale** (SEE APPENDIX F): How good a reader do you think you are now compared to other third formers?
Silent reading, *oral reading,*
understanding text, *speed of reading)*

6b Compared with all the third form readers from very good to very bad you can think of how good a reader do you think you need to be for the third form?

6c Compared with all the grown-up readers from very good to very bad how good a reader do you think you need to be when you leave school and are grown up?

7. **On this scale** (SEE APPENDIX F) how important is it to you to be as good a reader as this.

Show me **on this scale** (SEE APPENDIX F) how good a chance you think you have of becoming as good a reader as this.

8. What would Mum? Dad? like you to be able to read well enough to do when you leave school and are grown up?

Mum?

Dad?

On this scale (SEE APPENDIX F) show me how important it is to Mum? to Dad? that you can read as well as this?

Mum

Dad

---

9. Whenever you sit down to read is there something you would sooner be doing?

What do Mum? Dad? think you should have done before you sit down and read if it isn't for homework?

Mum?

Dad?

---

10 What extra help have you had at school with your reading?

reading recovery, remedial reading in standards, intermediate school

---

Have your parents arranged out of school help with your reading?

Covers

- *Pupil's perception of parental occupations.*
- *Pupil's perception of the intrinsic and utility value the parents place on reading*
- *Pupil's intrinsic and utility values for reading*
- *Pupil's perception of parent's attainment value for reading*
- *Pupil's attainment value for reading*
- *Pupil's perception of cost that parent's place on their leisure reading*
- *Cost to pupil of leisure reading*
- *Pupil's reading self-concept*
- *Pupil's expectancy of success*
- *Remedial help*

INITIAL INTERVIEW I

QUESTION 3

Students were asked to rate any material they read e.g., magazines, TV News, books, etc.

I like reading  I hate reading

I like reading  I hate reading

I like reading  I hate reading

I like reading  I hate reading

I like reading  I hate reading

I like reading  I hate reading

APPENDIX B

INITIAL INTERVIEW II

Reading Strategies

Monitoring Strategies

Self Efficacy

Goal Setting

INITIAL INTERVIEW II

Strategies, Monitoring, Self-Efficacy, Goal Setting

Provide a selection of examples of text of differing difficulty and length.

1 Do you think any of these is easy to read?

What makes it easy to read?
Direct attention to pictures, hard words, sentences, print size, number of words on page, length of text.

---

2 Do you think you could finish any of these?
By yourself, with my help, with Mum's or Dad's help?

---

3 Do you think any of these are hard to read?
What makes it hard to read?
Pictures, hard words, sentences, print size, number of words on page, length of text.

---

4 Academic Self-Beliefs for Reading Questionnaire (for easy and hard text).
SEE APPENDIX D

5 What do you find hardest about reading:
understanding what it is about, ----------

---

reading the words, ----------

---

reading fast enough to finish, ----------

Do you mainly look at the pictures? ----------

---

6. Would any of these words be difficult to read?
Select difficult words.

What do you do to work out what the word is?
Sound through, try to run the sounds together, read on/read back, think of meaning, think of what sounds right,

---

Do you usually do this for a hard word?

---

7 If you can't work out what the word is what do you usually do?
ask somebody, keep thinking about it, miss it out.

Is this what you usually do?

---

8 When you have worked a word out do you think about whether you have got it right or not?
Use examples in text

How do you know?
Sounds right, makes sense, looks right for the letters, real word

---

9 What would make you think that it isn't the right word?
I haven't heard the word before, it doesn't make sense, sounds wrong

---

What would you do then?

---

10 Is saying new words difficult for you?

Does this make it difficult to sound out words?

---

11 Do your eyes feel funny when you read?

---

12 What sort of things do you do while you are reading?

---

13 When you read are you working hardest at getting the words right or at understanding the meaning.

What do you think is more important for you: getting the words right or understanding what you read?

Do you usually understand what you read?

---

14 When some of the words are hard to read do you keep reading or do you give up?

When quite a lot of the words are hard to read?

---

15 This week has it been difficult to finish reading things because you read slowly?

In class? ----------

Out of class? ----------

---

16 Do you worry about reading in class?

In tests?

The student was asked to assess a variety of texts such as story books, manuals, recipe books and magazines for difficulty level. Their self-efficacy to read a variety of texts was investigated with the following two questions.

17 *Easy text.*

Before you started to read this would you think

I can read these words? I can finish this sentence?
I can finish this paragraph? I can finish this page?
I can read all of this chapter?

Would you try to do any of these if you think you can and you were given the time?

Quite hard text

Before you started to read this would you think

I can read these words? I can finish this sentence?

I can finish this paragraph? I can finish this page?

I can read all of this chapter?

Would you try to do any of these if you think you can and you were given the time?

---

18 When you read do you feel as if you put lots of energy into:
reading the words?

---

understanding what you read?

Do you feel really interested when you read? ----------

---

19 Are there any books here where you think you would have control over your reading?

APPENDIX C

PARENT INTERVIEW

PARENT INTERVIEW

1. Introduce myself.
   Information probably spread through interview including:
   registered teacher, teaching experience and qualifications in remedial reading, examples of previous tuition. Teaching Programme

2. What do the Parents do?
   Paid_____
   _
   _____

   Unpaid_____
   _____

   Previous employment where relevant
   _____
   _____

   Interests and hobbies_____
   _____

3. Access to books:
   Encyclopaedia _____ Dictionary _____

   Other types of books_____
   _____

   Magazines_____

   Library _____

4. What does _____ read _____
   _____

   How often_____

   How long _____

   Homework_____

   Fun_____

   Words or
   pictures_____

5 What sort of job do the parents think _____ might have?
   _____
   _____

   What would the reading requirements be?
   _____
   _____

   What other reading requirements might _____ have as an adult?
   _____

   How good a reader do they think _____ will need to be?
   _____

6. What TV stations does the family listen to?_

What radio stations does the family listen to?

7. What do parent's read:

Work

Information

Leisure

Library

Magazines

8. _____ areas of strength and weakness

9. Remedial reading history
School

Private

10. Other relevant details:
Vision

Hearing

Medications

APPENDIX D

INITIAL INTERVIEW II,

SELF-RATING FORM

Self-Efficacy Judgements

Reading Strategy Beliefs

INTERVIEW II, Question 4

Use Neale Diagnostic Tutor passages
Choose a story that is **easy** to read (the hardest passage that is still easy to read)

Easy O—O—O—O—O Hard

OR

Use Neale Diagnostic Tutor passages
Choose a story that is **quite hard** to read (the hardest passage that you feel you can cope with

Easy O—O—O—O—O Hard

READING THE WORDS IN THAT PARAGRAPH

I can read this without help O—O—O—O—O I can't read this without help

Reading the words in that paragraph

Nearly all the words were easy to read O—O—O—O—O Lots of the words were hard to read

Reading the words in that paragraph

I try hard to work out the difficult words O—O—O—O—O I didn't try hard to work out the difficult words

Reading the words in that paragraph

I guessed lots of the hard words O—O—O—O—O I didn't guess the hard words

Reading the words in that paragraph

I know the best ways to work out the hard words O—O—O—O—O I don't know the best ways to work out the hard words

APPENDIX E

STRATEGY RUNNING RECORDS

SELF-RATING FORM

Reading Self-Beliefs

Strategies

READING THE WORDS ON THAT PAGE

I can read this without help — O—O—O—O—O — I can't read this without help

Reading the words on that page

Nearly all the words were easy to read — O—O—O—O—O — Lots of the words were hard to read

Reading the words on that page

I try hard to work out the difficult words — O—O—O—O—O — I didn't try hard to work out the difficult words

Reading the words on that page

I guessed lots of the hard words — O—O—O—O—O — I didn't guess the hard words

Strategies used:

APPENDIX F

INITIAL INTERVIEW I

SELF-RATING FORM

Reading Ability

Value of Reading

Question 6a

Compared to all the other Year _____ readers
how good a reader do you think you are?

I am good at silent reading	O—O—O—O—O	I am not good at silent reading
I am good at reading out loud	O—O—O—O—O	I am not good at reading out loud
I am good at understanding text	O—O—O—O—O	I am not good at understanding text
I am fast at reading	O—O—O—O—O	I am slow at reading

Question 6b

I need to be a very good third form reader	O—O—O—O—O	I don't need to be a very good third form reader

Question 6c

I need to be a very good adult reader	O—O—O—O—O	I don't need to be a very good adult reader

Question 7

It is very important to me	O—O—O—O—O	It is not very Important to me
I have a very good chance	O—O—O—O—O	I don't have much chance

Question 8

It is very important to Mum	O—O—O—O—O	It is not very important to Mum
It is very important to Dad	O—O—O—O—O	It is not very important to Dad

APPENDIX G

NEW ZEALAND SCHOOL JOURNAL ARTICLES

Key and References

Appendix G. The key and references for the New Zealand journal articles read for the fluency and strategy running record series.

SCHOOL JOURNAL ARTICLES	STUDENT	KEY	REFERENCE
Journal Level 8 - 9 years			
A girl's best friend by Nancy Patulski	David	GBF	Pt 4. No 1. 1996 p. 44
Best performance by David Hill	David	BP	Pt 4, No 3, 1996 p.15
Love story by Heather Marshall	David	Several	Pt 4, No1, 1996, p. 33
Mannering, Champion, May and --- by Jillian Sullivan	David	Several	Pt 4, No 2, 1996, p. 8
The luger by Ted Austin	David	L	Pt 4, No 1, 1993, p.9
White Sunday in Samoa by Arty Kuresa	David	Several	Pt 4, No2, 1996, p.11
Journal Level 9 - 10 years			
Hari Raya Eidil Fitri by Abdul Az	David	Several	Pt 4, No 2, 1996, p.14
Learning to read and write by Michael Marquet	David	LRW	Pt 4, No 3, 1996, 18
Mother Sister by Norman Bilbrough	David	MS	Pt 4, No 3, 1994, p.28
Mr Vibol's dilemma by Choeun Saroum	David	MVD	Pt 4, No 3, 1996 p.32
The minefield by Nhem Sothy	David	Several	Pt 4, No 3, 1996, p. 35
Journal Level 9.5 – 10.5 years			
Help by Michael Smale	Garth	H	Pt 4, No 1, 1994, p.12
Letters from the land of the thunder giant. Excepts from Gail Trevarthen's letters	Garth	TD	Pt 4, No 1, 1989, p.17
Melanie rules by Alan Bagnall	Garth	MR	Pt 4, No 3, 1997, p11
Treasure ghosts and divers by Bob McConnell	Garth	TGD	Pt 4, No 2, 1996, p. 44
When young people ran the newspaper by Janet McCallum	Garth	YP	Pt 4, No 2, 1995, p. 9
Journal Level 10 – 12 years			
Auction fever by Heather Marshall	Garth	AF	Pt 4, No 2, 1995, p.28
	John	AF	
	Susan	AF	
	Tom	AF	
Fence battens and goats by Bob McConnell	Tom	Several	Part 4, No1, 1996, 22
Living in the old museum house	John	OMH	Pt 4, No 2, 1995, p34
	Susan	OMH	
No meat please: I'm vegetarian by Norman Bilbrough	Mark	Several	
	Susan	Several	
	Tom	NMP	
Pigs in the night by Jocelyn Oldcorn	Garth	PN	Pt 4, No 2, 1995, p.46
	John	PN	
	Susan	PN	
Precious liquid and the sky stones by David Calder	Mark	Several	Pt 4, No 3, 1997, p. 36
	John	PL	
Rodeo riders by John Bonallack	Tom	RR	Pt 4, No 1, 1994, p.2
Rowing to the Olympics by Alan Bagnall	Tom	Several	Pt 4, No 2, 1997, p. 29
	Susan	Several	
Shifting Sands by Andrew Crowe	Mark	Several	Pt 4, No2, 1996, p.28
	John	SS	
Solomon by Heather Marshall	Garth	S	Pt 4, No 2, 1994, p.26
	Susan	S	
	Tom	S	
Stories in my head by Alan Bagnall	Tom	Several	Pt 4, No 2, 1997 p. 33

Continued on next page.

Appendix G continued from the previous page.

Surfing the sandbar by John Lochyer	Mark	Several	Pt 4, No3, 1997, p.2
	Susan	Several	
The biggest kite in the world by John Bonallack	Mark	Several	Pt 4, No2, 1997, p. 24
	John	BK	
	Susan	Several	
	Tom	Several	
Journal Level 11 – 13 years			
Catching the big ones by John Bonallack	Susan	---	Pt 4, No 3, 1994, p. 8
	Mark	CBO	
Dead rat live on stage by Donna Giltrap	Garth	Several	Pt 4, No2, 1997, p. 42
	John	DR	
	Susan	---	
Dear Mum. A letter written by Penny Chambers	Garth	DM	Pt 4, No 1, 1996, p. 38
	Mark	DM	
	Tom	DM	
	Susan	---	
How steep is steep by Keith Olsen	Garth	Several	Pt 4, No 3, 1996, p.24
	Susan	---	
	Tom	Several	
I'm dreading it by Diana Noonan	Mark	IDI	Pt 4, No 3, 1997, p.14
	Tom	IDI	
Kiunda by Noelle M'Marete	Tom	K	Pt 4, No1, 1989, p.31
Oil spill – Are we prepared? By Norman Bilbrough	Mark	OS	
	Susan	OS	
Sailing to Italy by Adrienne Jansen	Mark	Several	
Something old, something new by Sarah Hunter	Tom	SOSN	Pt 4, No 1, 1997, p.11
The deadly touch by Andrew Crowe	Garth	Several	Pt 4,No 3, 1996, p. 38
	Mark	Several	
	John	DT	
	Susan	---	
	Tom	Several	
The death of Ben Hall by William H. Ogilvie: and Ben Hall, bushranger: This was your life	Mark	BH	Pt 4, No 3, 1991, p. 26 p. 31
The duel on the Lyell by Alwyn Owen	Garth	DL	Pt 4, No 2, 1995, p.2
	Tom	DL	
The first Olympic marathon by Douglas Carian	Mark	Several	Pt 4, No 1, 1996, p.5
The river crossing by A. Corrie-Johnstone	Garth	RC	Pt 4, No 1, 1995, p. 2
	John	RC	
	Susan	RC	
Walking on water – the Grass Water Spider by Diana Noonan	Mark	Several	Pt 4, No 3, 1994, p. 38
	Tom	Several	
Journal Level 12 – 14 years			
Expedition up the Ganga River. Part three: To the sky by Graeme Dingle	Mark	EGR	Pt 4, No 3, 1984, p. 20
Where my ancestors walked by Ray Ahipene-Mercer, Ngai Tara	Mark	WMAW	Pt 4, No 2, 1990, p.2
Power crises. Where to now? By John Bonallack	Mark	PC	Pt 4, No 2, 1993, p. 2
The motorway debate by Pat Quinn	Mark	MD	Pt 4, No 1, 1992, p. 26
Old Finchley by Laurie Mantell	Garth	OF	Pt 4, No 3, 1983, p. 14

Note: Several = Usually the student read once or sometimes twice from the article.

APPENDIX H

GARTH

EXAMPLES OF MISCUES

Pronouns

Tense

Two Word Contractions

Similar Words

Table H1. Pronoun miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Pron.	Miscues
1		she/we/x; his/the/sc; his/the/x; he/we/x
2		my/you/sc; he/she/sc; everybody/everyone/sc; our/you/x; the/they/x; hers/her/x
3		the/they/x; they/the/x
4		these/those/sc; his/this/x; we/he/sc
5 NR		
6		---
7		he/here/sc; it/its/sc
8		I/the/sc; I/it/x;
9		his/the/sc; the/her/x
10 NR		
11 NR		
12 NR		
13		that/had/sc;
14		the/that/x
15		you'll/who'll/sc; me/your/sc; he/its/sc
16		it/I/x; he/we/sc
17 NR		
18	16	he/we/sc; we're/we've/sc; we're/we've/sc; I'll/it'll/x
19 NR		
20	19	those/they/sc; they/why/sc; when/we/sc; it/I'd/sc; I'd/it'll/sc
21		there/they/sc
22 NR		
23		the/our/x; he/our/sc; everyone/everything/sc; I'm/it's/sc; the/he/x; he/we/sc
24 NR		
25	8	his/a/x; anybody/anyone/x
26		it/I/sc; that/his/x
27 NR		
28		the/his/sc; everyone/everybody/sc; to/it/sc
29		I/it/sc; they/their/sc; they/their/sc
30		---
31		what/that/sc
32		they/their/sc
33		---

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue: No. = number; NR = no running record; Progr. = programme; Pron. = pronoun; Wk = week. The self-correction rate was 65% for these pronouns.

Table H2. Tense miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of p.t. verbs or a.t.	Miscues
1		didn't/don't/x
2		leaped/leaps/sc; punched/pushes/T; called/calls/x; pushed/pausing/T; stepped/steps/T; called/calls/x; clutched/clutches/sc.
3		---
4		coming/came/x; go/get/sc; were/was/sc
5 NR		
6		---
7		---
8		---
9		came/come/x
10 NR		
11 NR		
12 NR		
13		---
14	p.t.75 a.t. 0.1	hangs/hung/x; like/liked/x; needed/need/x; bidded/bid/x
15		---
16		seemed/seems/x
17 NR		
18		went/came/sc; going/got/sc; going/got/sc
19 NR		
20		seemed/seems/sc; liked/likes/x
21		sleep/sleeping/sc
22 NR		
23	p.t. 12	was/are/x; managed/manages/x; said/says/x; run/runs/x; sat/sit/x; met/meet/x
24 NR		
25		came/comes/x; changed/changing/x
26		leaped/leaps/x; climb/clinging/x; threw/throw/x
27 NR		
28		happened/happen/x; don't/didn't/x
29		get/getting/x; were/was/sc; awoke/awake/x
30	p.t.26	shouted/shouts/x; runs/running/x; tripped/trip/x; stumbled/stumble/x; gave/give/x; screeched/shrieks/x; got/go/sc; goes/got/sc; go/gone/sc
31		dropped/drop/x; came/comes/x; said/says/x
32		rinsed/rinsing/sc; wake/waken/x
33		chopped/chop/x

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; . x = miscue is not self-corrected; T = the correct word was supplied; a.t. = verbs of all tenses; p.t. = present tense verbs; No. = number; NR = no running record; Progr. = programme; Wk = week. The self-correction rate for these verbs = 26%.

Table H3. Miscued contractions from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Contr.	Miscues
1	33	did not/don't/x
2		---
3	25	did not/didn't/x
4		he had/he'd/x; well/we//sc
5 NR		
6		---
7	10	could/couldn't/sc; couldn't/could/x; had/hadn't/sc
8		might/mightn't/x
9		---
10 NR		
11 NR		
12 NR		
13		---
14		its/it'll/sc
15		---
16		---
17 NR		
18	36	he/he'd/x; we're/we've/sc; I'll/I/sc; we're/we've/sc; I'll/it'll/x
19 NR		
20		well/we'll/sc; it/I'd/sc; I'd/it'll/sc
21		
22 NR		
23		didn't/don't/x; I'm/it's/sc; that is/that's/x; he was/he's/x
24 NR		
25		we were/we're/x;
26		he'll/he/x
27 NR		
28		don't/didn't/sc; won't/will/x
29		---
30		she/she's/x; she/she's/x
31		---
32		---
33		there's/there is/x; there's these/x

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; No. = number; NR = no running record; Progr. = programme; Contr. = contraction; Wk = week. x = miscue

Table H4. Miscues involving confusions of: from, for, of and form from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total No.	Miscues
1	50	from/of/T
2		---
3	100	for/from/sc
4		---
5 NR		
6		---
7		---
8		---
9		---
10 NR		
11 NR		
12 NR		
13		---
14		---
15		---
16		---
17 NR		
18		---
19 NR		
20	25	from/for/x
21		for/from/sc
22 NR		
23		---
24 NR		
25		---
26	17	of/from/x; from/form/x
27 NR		
28		---
29		---
30		from/forms/sc
31		---
32		---
33		from/for/sc

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue was not self-corrected; No. = number; NR = no running record; Progr. = programme; T = the correct word was supplied; Wk = week. The self-correction rate for these similar words was 50%.

Table H1a. Examples of pronoun miscues from the Neale assessment and Table H1 within their text context.

	Selected Miscues in Context
Neale	Tina the lion trainer stumbled. She/Her whip fell. Reading 1: Correct Reading 2: She whip ---; She whipped fell; Her whip fell. (sc) Reading 3: She whipped; Her whip fell. (sc) Reading 4: She/Her (sc)
Progr. Wk No.	
1a	--- treasure buried at the back of Gran's house. We all knew about it although she/we/x didn't know just where it was.
1b	--- Grandpa had some tapu things in his pack and they would bring harm to his/the/sc family.
7	It/It's/sc hopeless, ---
8a	I would drown. I/The/sc thought of getting eaten by a shark ---
8b	I lunged for the tube before I/ it/x could get away.
9a	He had come to the West Coast and in 1885 brought his/the/sc newspaper, ---
9b	Norah became the owner but could not look after the/her/sc younger children ---
14	--- and the auctioneer said it's/it'll/x be put up around four o'clock.
15	"Brighten your lounge or bach or the kid's room. You'll/Who'll/sc start me at fifty?"
16	"You said it was only worth eighty." "It/I/x was wrong.

Note: Each miscue is listed first followed by the correct text version. x = the miscue is not self-corrected; sc = the miscue is self-corrected; Progr. = programme; Wk = week; No. = number.

Table H2a. Examples of tense miscues from Table H2 within their text context.

Progr. Wk No.	Selected Miscues in Context
4 a	Dad loved to go diving --- and sometimes he'd stay under so long we'd go/get/sc worried.
4b	We were coming/never came/x home ---
4c	In those days there were/was/sc plenty of seafood; ---
9	He had came/come/x ---
14a	The cat had sharpened her claws on the upholstery and the material hangs/hung/sc in shreds.
14b	But I like/liked/x our old sofa ---
14c	"We needed/need/x a new sofa," Mum said.
14d	She bidded/bid/x thirty dollars ---
23a	All of a sudden there was/are/x more kids playing in our street.
23b	In the second week I met/meet/x Paul, ---
23c	Paul always managed/manages/x to be on my side ---
23d	"Who needs you?" said/says/x Andy --
30a	"I got him," Paul shouted/shouts/x.
30b	She runs/She's running/x towards the crowd, ---
30c	--- the shove between the shoulders that Alice gave/gives/x him.
30d	"He goes/got/sc away, you horrible bullies. ---

Note: Each miscue is followed by the correct text version. x = miscue is not self-corrected; sc = miscue is self-corrected; progr = programme; Wk = week; No. = number.

Table H3a. Examples of miscues involving two words contracted together from Table H3 within their text context.

Progr. Wk No.	Selected Miscues in Context.
1	We did not/ don't/x know how he knew, ---
2	Grandpa did not/didn't/x believe in ghosts ---
7a	But still we had/hadn't/sc got to where ---
7b	I could/couldn't/sc believe it.
7c	Once we had reached a certain point we couldn't/could/x get no closer.
18a	When Dad came to get me to help load up he/he'd/x bought so much ---
18b	"We're/We've/sc got an incinerator."
18c	--- We're/ We've/sc got one."
18d	"It'll burn through before long. I'll/I/sc got this one cheap."
18e	"We haven't got a hand mower. I'll/It'll/x come in handy ---
30a	She runs/She's running/x towards the crowd, ---
30b	She/She's/x screaming with rage.

Note: Each miscue is followed by the correct text version. x = miscue not self-corrected; sc = self-corrected; Progr. = programme; Wk = week; No. = number.

Table H4a. Examples of miscues involving from/for/of and form within their text context.

Progr. Wk No.	Selected Miscues in Context
1	He was some sort from/of/T Tohunga, ---
3	--- Dad kept watch over the body till the policeman arrived for/from/sc Port Awanui ---
20	They went from/for/x ten dollars ---
26a	The kids are poking him with sticks they've cut of/from/sc the clump of bamboo ---
26b	I hesitate and see criticism beginning to from/form/sc on Paul's face.
30	The mob turns the circle inside out and from/forms/sc again around Alice.

Note: Each miscue is followed by the correct text version. x = miscue is not self-corrected; sc = miscue is self-corrected; T = The correct text word is supplied; Progr. = programme; Wk = week; No. = number.

APPENDIX I

GARTH

INITIAL-LETTER STRATEGY

Table I1. The one-syllable initial-letter strategy miscues for weeks 13 – 21 from the strategy running record series.

Progr. Wk No.	Initial-letter One-Syllable Miscues
13	fill/full/x; at/and/x; track/truck/x; there/they/x; at/and/x; the/that/x
14	Joan's/John's/x; tramps/traps/x Springs/Sprigs/x; Joan's/John's/x; fill/full/x; Springer/Sprigs/x; are/and/x.
15	the/They/sc; of/on/x; black/bank/sc; his/he's/sc; quote/quite/sc.
16	had/has/x; but/by/x; a/at/sc; lead/lee/x; best/breast/x; fill/flood/sc; the/thatsc;
17	for/from/x; the/that/sc; shot/shout/x; good/God/sc;
18	form/foam/sc; near/new/sc; him/his/sc; they/the/sc; then/there/x
19	within/with/x; then/the/x; swang/swung/x; the/that/sc; force/front/sc
20	the/that/x; the/then/x; help/held/x; hi/hoi/sc; so/seen/sc; a/and/x; wisp/whip/sc
21	when/where/x; for/from/sc; wanted/would/sc;

Note: The miscue is given first followed by the correct text word. x = the miscue is not corrected; sc = the miscue is self-corrected. Progr. Wk No. = programme week number.

Table I2. The two-syllable initial-letter strategy miscues for weeks 13-21 from the strategy running record series.

Progr. Wk No.	Initial-letter Two-Syllable Miscues
13	plonkers/polers/x; springing/spilling/sc
14	worrying/warning/x; post-tests/protest/sc
15	come/c'mon/x; Barley/Baldy/x; crashed/cracked/x; branched/braced/x; launched/lurched/x
16	come/c'mon/sc; Barley/Baldy/x; launched/lurched/x; crashed/cracked/x
17	heavying/heaving/x; silently/slightly/x; patched/patted/x; above/about/x; fence/fierce/x; should/shouted/x
18	edges/eddies/x; snucked/sucked/x; bushes/branches/x; brushed/braced/x; have/heavy/sc; Barley/Baldy/x
19	wagging/wagon/sc; lumber/limbed/x; above/about/x; and an/amid/x; started/strained/x; Barley/Baldy/x
20	Barley/Baldy/x; Sony/sonny/x; they/they're/sc; Holy/Holly/sc; stirrup/salute/x; leave/level/sc; behind/beyond/x
21	Cheryl/Charlie/x

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table 11a. Selected one-syllable initial-letter miscues in their text context.

Progr. Wk No.	Selected One-Syllable Miscues in Context
16a	But John has/had/x seen that ---
16b	But John had seen the/that/sc above the ford ---
16c	But John had seen --- some distance. But/By/sc making a sharp turn ---
16d	To everyone's astonishment, and a/at/sc the risk ---
16e	Under the lend/lee/x of the bank ---
16f	Now to turn left and best/breast/x the full force of the torrent.
16g	Spray filled the air as fill/flood/sc –borne driftwood hurtled ---
19a	Swaying and balancing grimly whip-cracking within/with/x all his force ---
19b	And the/then/x the heavy load swung around ---
19c	And slowly, desperately fighting the/that/sc great current ---
19d	--- the good beasts held ground. The force/front/sc wheel assembly ---

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table I2a. Selected two-syllable miscues within their text contexts.

Progr. Wk No.	Selected Two-Syllable Miscues in Context
16a	The polers answered and held course as the wagon launched/lurched/x and straightened.
16b	The whip crashed/cracked.
16c	Again John yelled encouragement to hold firm against the pushing/plunging/x wagon.
16d	--- they were all safe on the bank side/beside/x the firewood.
19a	--- the spectators saw the whole outfit in mid-flood, now above, now under, horns tossing wildly, wagging/wagon/sc awash, ---
19b	A broken –lumber/limbed/x tree ---
19c	--- crashed above/about/x them ---
19d	--- crashed about them and/amid/x an avalanche of muddy foam.
19e	His eyes started/strained/x to see the rock ---

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

APPENDIX J

MARK

EXAMPLES OF MISCUES

Pronouns

Tense

Two Word Contractions

Similar Words

Table J1. Pronoun miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Pron.	Miscues
1		the/that/x
2	0.04	I/it/sc; this/its/sc
3		the/its/x; the/he/sc
4		if/it/x; me/my/sc
5 NR		
6		---
7		under/her/x
8		---
9		I/it/sc;
10		---
11 NR		
12 NR		
13 NR		
14	0.1	then/they/sc; I/it;
15		---
16		have/his/sc
17 NR		
18		those/these/x
19		---
20		---
21		---
22		---
23		these/those/these/x
24 NR		
25		how/who/x; the/this/x
26 NR		
27		---
28		---
29		this/his/sc
30 NR		
31		the/that/x
32		---
33 NR		

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue is not self-corrected; No. = number; NR = no running record; Progr. = programme; Pron. = pronoun; Wk = week. The self-correction rate was 44% for these pronouns.

Table J2. Tense miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of p.t. verbs or a.t.	Miscues
1		flown/flying/x
2	p.t. 9	do/did/x; pushed/pushes/sc; going/gone/x
3		---
4		used/use/T
5 NR		
6		comes/come/x
7		---
8		---
9		slanted/slanting/x; have/had/x; will/were/x
10		---
11 NR		
12 NR		
13 NR		
14	p.t. 20	keeped/keep/x; have/had/x
15		wondered/wonder/x; looking/looked/x
16		---
17 NR		
18		spread/spreads/x
19		hindering/hindered/x
20		threw/thrown/sc; hit/hitting/x; concealing/concerned/T
21		---
22		deposit/deposited/sc
23		---
24 NR		
25		---
26 NR		
27		---
28		---
29	p.t. 50	have/had/x
30 NR		
31		knew/know/x
32		rid/rode/riding/sc
33 NR		

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue is not self-corrected; T = the correct word was supplied; a.t. = verbs of all tenses; p.t. = present tense verbs; No. = number; NR = no running record; Progr. = programme; Wk = week The self-correction rate for these verbs = 18%

Table J3. Miscued contractions from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Contr.	Miscues
1		---
2	52	well/we'll/x; would/wouldn't/x; didn't/did/x; was/wasn't/sc; well/we'll/sc; we/we'll/x; its/it/sc; well/we'll/x can't/could/x; we're/we've/x; we/we've/sc; have/haven't/x
3		---
4		could/couldn't/sc; don't/didn't/sc; didn't/don't/x; didn't/don't/x; didn't/don't/x; didn't/don/t/T; don't/do/x
5 NR		
6		were/weren't/sc
7		that's/that/sc; where are/where're/T
8		---
9		was/wasn't/sc
10		---
11 NR		
12 NR		
13 NR		
14		have/haven't/x
15		---
16		he'd/he/x
17 NR		
18		---
19		---
20	0/0	---
21		---
22		---
23	0/3	---
24 NR		
25		---
26 NR		
27		---
28		---
29	0/0	---
30 NR		
31		---
32	0/0	---
33 NR		

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; No. = number; NR = no running record; Progr. = programme; Contr. = contraction; Wk = week; x = miscue is not self-corrected. The self-correction rate for these contractions was 36 %.

Table J4. Miscues involving confusions of: from, for, of and form from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total No.	Miscues
1		---
2		---
3		---
4		---
5 NR		
6		---
7	33	from/for/sc
8	40	for/of/x; of/from/x
9		---
10		from/for/sc
11 NR		
12 NR		
13 NR		
14		---
15		---
16		for/from/sc
17 NR		
18		---
19		---
20		---
21		---
22		from/for/x
23		---
24 NR		
25		---
26 NR		
27		---
28		---
29		---
30 NR		
31		---
32		---
33 NR		

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue was not self-corrected; No. = number; NR = no running record; Progr. = programme; T = the correct word was supplied; Wk = week. The self-correction rate for these similar words was 50%.

Table J1a. Examples of pronoun miscues from Table J1 within their text context.

Progr. Wk No.	Selected Miscues in Context
2	People started asking me to design and build kites for them so I/it/x became my job. We're doing something like thirty international festivals this year. So this/its/sc worked out well.
14	I really haven't a clue what I'm doing then/they/sc teach you very little --- --- the thing that I had feared most. I/It/x proved easier than I'd thought.
29	Each one ready to shout at sight, with this/his/sc rifle cocked on his knees.

Note: Each miscue is listed first followed by the correct text version. x = the miscue is not self-corrected; sc = the miscue is self-corrected; Progr. = programme; Wk = week; No. = number.

Table J2a. Examples of present tense miscues from Table J2 within their text context.

Progr. Wk No.	Selected Miscues in Context
2a	How do/did/x you come to be making kites ---
2b	It's what we call "running the tail". This pushed/pushes/sc a great bubble of air ---
2c	--- we can't control the weather can we? And if we're going /we've gone/x overseas ---
14a	I've always had to be doing something. My thoughts keeped/keep/x going back to rock climbing ---
14b	My thoughts keep going back --- the thing I have/had feared most.
15	"I've done it!, I've done it!" then looking/looked/x up to see ---
29	And false was the whispered word. The troopers had/have/x turned to the south again, ---
31	And none would drink --- And I knew/know/x when I hear the last grim call --

Note: Each miscue is followed by the correct text version. x = miscue is not self-corrected; sc = miscue is self-corrected; progr = programme; Wk = week; No. = number.

Table J3a. Examples of miscues involving two words contracted together from Table J3 within their text context.

Progr. Wk No.	Selected Miscues in Context.
2a	And well/we'll/x check that there's no one left inside ---
2b	If Megabite took of with them inside, it would/wouldn't/x be funny!
2c	Well/we'll/sc be Hawaii next week.
2d	OK, we/we'll/x launch now.
2e	--- and sometimes, down! Well/we'll/x wait for a bit more wind.
2f	If we can't/could/x choose our times ---
2g	If we're going/we've gone/xx overseas, ---
4a	Maybe I could/couldn't/x imagine eating meat, ---
4b	I told him that I don't/didn't/sc want to eat something ---
4c	--- "I didn't/don't/x eat much meat either, ---

Note: Each miscue is followed by the correct text version. x = miscue not self-corrected; sc = self-corrected; Progr. = programme; Wk = week; No. = number.

Table J4a. Examples of miscues involving from/for/of and form within their text context.

Progr. Wk No.	Selected Miscues in Context
7	They watched her from/for/sc a moment ---
8a	It's a quick way for/of/x getting your boat up ---
8b	--- or even if I was getting out of/from/x under the boat ---
16	The Midas had been en-route to Marsden Point Refinery for/from/sc the Middle East.
30	Surveillance teams from the Department of Conservation, the Ministry from/for/x the Environment.

Note: Each miscue is followed by the correct text version. x = miscue is not self-corrected; sc = miscue is self-corrected; T = The correct text word is supplied; Progr. = programme; Wk = week; No. = number.

APPENDIX K

MARK

INITIAL-LETTER STRATEGY

Table K1. Mark's one-syllable initial-letter strategy miscues for weeks 13 – 21 from the strategy running record series.

Progr. Wk No.	Initial-Letter One-Syllable Miscues
13	---
14	from/for/x; will/would/x; means/mess/sc; cost/cause/sc
15	true/truce/true/x; dip/deep/x; dirt/dust/x; so/save/sc
16	with/when/x; for/from/sc
17	---
18	from/for/x
19	don't/do/x; must/may/sc; for/from/sc; these/those/x
20	you/your/sc; cold/cool/sc; greed/grid/x; a/an/x; by/but/x; keeping/kept/x; a/an/x
21	these/those/x;

Note: The miscue is given first followed by the correct text word. x = the miscue is not corrected; sc = the miscue is self-corrected. Progr. Wk No. = programme week number.

Table K2. Mark's two-syllable initial-letter strategy miscues for weeks 13-21 from the strategy running record series.

Progr. Wk No.	Initial-letter Two-Syllable Miscues
13	steadily/slightly/x
14	didn't/don't/x
15	they/they'll/sc; slightly/style/x; there/they'll/x
16	more/motor/x; tonnes/toxic/x; exhaust/exhales/x; over/other/x; cycles/cyclists/x; record/reduce/x
17	firm/fired/x
18	---
19	---
20	partly/partial/x
21	---

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table K3. Mark's three-syllable initial-letter strategy miscues for weeks 13-21 from the strategy running record series.

Progr. Wk No.	Initial-letter Three-Syllable Miscues
13	Arrival/average/x
14	Advantage/average/x
15	Population/pollution/x
16	Agreements/arguments/x
17	Whether/whatever/x
18	Vacant/vacated/x
19	---
20	Natural/national/x
21	---

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table K1a. Selected one-syllable initial-letter miscues in their text context.

Progr. Wk No.	Selected One-Syllable Miscues in Context
15a	It's also true/truce/true/x that some motorways ---
15b	The plans for the extension show it as a seven-metre-dip/deep/x "trench style" motorway—— -- -
15c	--- that's apart from the mud, noise, dirt/dust/x, and road-works ---
15d	To so/some/sc, a car is more than just a means of transport ---
20a	This will show where you/your/sc greatest savings can be made, ---
20b	El Nino --- produces more cold/cool/sc southerlies on winter.
20c	--- that form a/an/x additional blanket ---
20d	--- mothballed shut down completely by keeping/but kept/xx in working order.
20e	National greed/grid/x the network of supply lines ---
20f	--- as much power in a/an/x hour.

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table K2a. Selected two-syllable miscues within their text contexts.

Progr. Wk No.	Selected Two-Syllable Miscues in Context
15a	--- some of the areas --- look a mess, but they/they'll/sc be tidied up ---
15b	--- show it as a seven-metre-deep "trench" slightly/style/T motorway ---
15c	Alongside the path of the new section of motorway. There/they'll/x be affected by traffic noise ---
20	---cause major climatic changes and partly/partial/x melting of the Polar ice caps.

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table K3a. Selected three-syllable miscues within their text contexts.

Progr. Wk No.	Selected Three-Syllable Miscues in Context
15	However much it is beautified, the visual population/pollution/x and ---
20	Natural/national/T grid the network of supply lines ---

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

APPENDIX L

JOHN

INDEPENDENT LEARNING AND READING

Appendix L. John's independent home reading and learning

Date	Home reading and learning
20.7.98	Practised short vowels on own.
21.9.98	Learned phonograms and strategies at home. Had a go every couple of days. Reading Bravo Two Zero on own at home.
22.10.98	Volunteered that he learns consonants, blends and phonograms from notebook every day after school.
14.2.99	John read over the holidays: Some of Bravo Two Zero; the first page of *The Packhurst Tales: Prison in London* (His Mother got it from the library); Woman's Day (His Mother buys these); the front page and sometimes the sports page of the newspaper; teletext sport; lots of books, two goosebumps books, lots of Mum's books.
25.2.99	John has bought eight Christopher Pyke and R. L. Stine books. Mum and John are reading these.
2.3.99 – 15.3.99	Read *Wolf Speaker* at home and at school in the programme. (At home he sometimes read a page or two and sometimes nearly a chapter).

APPENDIX M

JOHN

EXAMPLES OF MISCUES

Pronouns

Tense

Two Word Contractions

Table M1. Pronoun miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Pron.	Miscues
1 NR		
2		the/it/sc
3	5	to/he/sc
4		it/its/sc
5 NR		
6	2.5	the/they/sc
7 NR		
8		---
9		---
10		—/I/x
11 NR		
12 NR		
13		---
14		---
15		---
16		---
17		---
18 NR		
19		---
20		---
21		---
22 NR		Programme Terminated
23 NR		
24 NR		
25 NR		
26 NR		
27 NR		
28 NR		
29 NR		
30 NR		
31 NR		
32 NR		
33 NR		

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue that is not self-corrected; No. = number; NR = no running record; Progr. = programme; Pron. = pronoun; Wk = week; No. = number. The self-correction rate was 80% for these pronouns.

Table M2. Tense miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of past & p.t. verbs	Miscues
1 NR		
2		---
3		---
4	1	touches/touched/x; repeat/repeated/x; hung/hurrying/sc;
5 NR		
6		annoy/annoyed/x; gathering/gathered/x
7 NR		
8		---
9 NR		
10		creeped/crept/x
11 NR		
12 NR		
13		---
14		---
15	3	brightened/brighten/x
16		guess/guessed/x
17		were/was/x
18 NR		
19		has/had/x
20		---
21	13	Dripped/drip/sc; use/using/sc; seems/seemed/x; smells/smelling/x
22 NR		Programme Terminated
23 NR		
24 NR		
25 NR		
26 NR		
27 NR		
28 NR		
29 NR		
30 NR		
31 NR		
32 NR		
33 NR		

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue is not self-corrected; T = the correct word was supplied; p.t. = present tense verbs; past = past tense verbs; No. = number; NR = no running record; Progr. = programme; Wk = week. The self-correction rate for these verbs = 31%.

Table M3. Miscued contractions from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Contr.	Miscues
1 NR		
2	31	well/we'll/sc; well/we'll/x; well/we'll/x; we'll/we've/x
3		---
4		can't/cannot/x
5 NR		
6		---
7 NR		
8		that's/that'd/x
9 NR		
10		didn't/don't/sc
11 NR		
12 NR		
13		---
14	11	it will/it'll/sc; I'd/I'll/sc
15		who/who'll/sc; that/that's/sc
16		---
17		---
18 NR		
19	43	Where/where're/x; well/we'll/x; it/it'll/sc
20		---
21		---
22 NR		Programme Terminated
23 NR		
24 NR		
25 NR		
26 NR		
27 NR		
28 NR		
29 NR		
30 NR		
31 NR		
32 NR		
33 NR		

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; No. = number; NR = no running record; Progr. = programme; Contr. = contraction; Wk = week. x = miscue not self-corrected. 50% self-correction rate.

Table M1a. Examples of pronoun miscues from the Neale assessment and Table M1 within their text context.

Progr. Wk No.	Selected Miscues in Context
2	First we blow some air into the/it/sc so that it inflates
3	The captain showed the farmer what to/he/sc had to sell.
4	The ship might be programmed to blow up if the wrong person touched it/its/sc controls.
6	--- asked the youngest child as the/they/sc
10	There was a snorting and a shuffling. —/I/x zoomed back to the truck.

Note: Each miscue is listed first followed by the correct text version. x = the miscue is not self-corrected; sc = the miscue is self-corrected; Progr. = programme; Wk = week; No. = number.

Table M2a. Examples of present tense miscues from Table M2 within their text context.

Progr. Wk No.	Selected Miscues in Context
4 a	--- be programmed to blow up if the wrong person touches/touched/sc its controls.
4b	The farmer thought the captain was joking and, brushing the answers aside, repeats/repeated/x the question.
4c	He was not going to spoil everything by hung/hurrying/sc.
4d	"Will you give me this agreement inn written/writing/sc?"
15	A lovely chesterfield. Daffodil yellow. Brightened/brighten/x your lounge ---
16	--- and now I guess/guessed/x why.
17	There were/was/x nothing I wanted.
19	If the argument has/had/x gone on five minutes longer, ---

Note: Each miscue is followed by the correct text version. x = miscue is not self-corrected; sc = miscue is self-corrected; progr. = programme; Wk = week; No. = number.

Table M3a. Examples of miscues involving two words contracted together, from Table M3 within their text context.

Progr. Wk No.	Selected Miscues in Context.
2a	And well/we'll/sc check ---
2b	Well/we'll/x be in Hawaii next week.
2c	Well/we'll/x wait for a bit more wind.
4	--- and I can't/cannot/x ask my family ---
8	"Hey great!" said Jane. "That/that'd/x sure wake them up.
10	"Great! We didn't/don't/sc want them to eat this food tonight."
14a	--- and the auctioneer said it will/it'll/sc be put up around ---
14b	"I'd/I'll/sc see what it goes for."
15a	"--- Who/who'll/sc start me at fifty?"
15b	"That/that's/sc it, Mum. ---
19a	"Where/Where're/x you going to put it?"
19b	"Well/We'll/x have a garage sale ---
19c	It/It'll/sc stay there until next time auction fever strikes.

Note: Each miscue is followed by the correct text version. x = miscue not self-corrected; sc = self-corrected; Progr. = programme; Wk = week; No. = number.

APPENDIX N

JOHN

INITIAL-LETTER STRATEGY

Table N1. The one-syllable initial-letter strategy miscues for weeks 8 – 20 from the strategy running record series.

Progr. Wk No.	Initial-Letter One-Syllable Miscues
8	the/this/sc
9	they/the/x
10	you'll/you/sc
13	pulled/put/x
14	sweeped/swept/x
15	heaven/heave/x; his/he's/sc
18	Mart/Mark/sc; your/you/x
20	loud/low/x; streak/stretch/x

Note: The miscue is given first followed by the correct text word. x = the miscue is not corrected; sc = the miscue is self-corrected; Progr. Wk No. = programme week number.

Table N2. The two-syllable initial-letter strategy miscues for weeks 8-20 from the strategy running record series.

Progr. Wk No.	Initial-letter Two-Syllable Miscues
8	running/raining/sc; struggling/snugly/x; forget/forage/x; felting/fleeting/x; dying/drying/sc
9	quietly/quickly/sc; stumpled/stumpy/x; Sony/Sonny/x
10	standing/stranded/x; beginning/being/x; cringing/churning/sc
13	Baldly/Baldy/x; snout/stout/x; rumbled/rubbed/x; sometime/something/sc; fence/fierce/sc
14	such/sucked/x; branched/braced/x; fateful/faithful/x; wildly/widely/wildly/sc; they/they'll/sc
15	Sony/Sonny/x
18	---
20	even/ever/sc; it/it'll/sc

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table N1A. Selected one-syllable initial-letter miscues in their text context.

Progr. Wk No.	Selected One-Syllable Miscues in Context
8	Joe Rankin was in the/this/sc morning ---
9	Yes good faithful beasts. Stumpy and Ginger, they/the/x heavy, solid polers, ---
14	A wild exhultation sweeped/swept/x through him ---
20a	--- performing to its usual loud/low/x standard.
20b	They'd managed to streak/stretch/x this tired old number ---

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively; Progr. Wk No. = programme week number.

Table N2A. Selected two-syllable miscues within their text contexts.

Progr. Wk No.	Selected Two-Syllable Miscues in Context
8a	--- and said it was running/raining/sc cats and dogs ---
8b	Early evening saw him struggling/snugly/x camped ---
8c	--- bullocks turned out to forget/forage/x along the stream bank.
8d	For a felting/fleeting/x moment he thought of ---
8e	They were dying/drying/sc well, ---
10a	Several traps, wagons and carts were already standing/stranded/x in the inn yard, ---
10b	--- great rocks on each side of the ford were rapidly beginning/being/x submerged –
10c	--- noses just above the cringing/churning/sc waters; ---
20	--- "You can't even/ever/sc be a rock star with your condition."

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively; Progr. Wk No. = programme week number.

APPENDIX O

SUSAN

Independent Reading

Causal Attribution and Self-Efficacy Ratings

Table O1. Susan's independent reading at home.

Date	Home reading and learning
23.7.98	Read at home.
27.8.98	Read two chapters of R.L. Stine book at home.
10.9.98	*Susan came bursting into the room really excited and telling us how she had read all last night:-* "From half past three maybe to about half past nine. I stopped --- Yeah the book is really cool --- It was called *The Evil Summer* by R. L. Stine and like this girl Chrissy she's the mother helper --- I kinda had tea in the middle of it. Like scoffed it down washed the dishes and went back to reading"
15.9.98	Reading *In the Middle of the Night.* Robert Cormier.
24.9.98	Reading *The Face* R. L. Stine
12.10.98	Finished *The Face* R. L. Stine in one day (raining). Taken out *The Thrill Club R. L. Stine*
27.10.98	Finished *The Thrill Club* Took out *The Vampire Diaries*
3.11.98	*Fear Street Night Games* R. L. Stine
30.11.98	Organised two books from the library: *The Boy Next Door* and *All Night Party* R. L. Stine
16.2.99	In the holidays read *Best Friend* R. L. Stine (dumb) and *Go Ask Anna* Anonymous, Read about 5 – 6 books; all different books, chapter books
2.3.99.	*The Life and Loves of Zoe T. Curley* Good
17.3.99	*Darker*
14.6.99	Reading poems about trust from a friend
July 1999	Read in the holidays *All of Me, The Last Refuge, Letters from the Inside John* Marsden, *Junk.*

Note: Authors of the books Susan read have been given where she remembered them.

Table O2. Susan's weekly strategy running record self-efficacy and causal attribution ratings.

Progr. Wk No.	% Acc.	No Help/Help	Easy/Hard	Tried/Didn't Try	Guessed/Didn't Guess
1	84.1				
2	90.8				
3	87.8	3	4	3	1
4	91.5	3		1	4
5	89.2	3	4	3	3
6	89.7	3	3	3	3
7	84.9	3	4	2	3
8	81.1	3	4	4	1
9	91.9	3	2	1	5
10	89.0	2	2	2	3
12	86.1	3	2	1	4
13	91.5	2	2	2	4
14	87.5	2	1	1	5
17	89.5	2	1	1	5
18	91.9	2	3	2	4
21	82.2	2	2	1	4
23	86.9	2	2	1	5
26	85.6	2	3	1	5
28	86.5	2	3	1	4
32	87.9	2	2	1	5

Note: The questionnaire for the causal attribution and self-efficacy ratings is given in Appendix E. The self-rating scale = 1-5. 1 = No Help (Susan believed she needed no help to read the passage), 1 = Easy (Susan rated the passage as easy to read), 1 = tried hard, 1 = guessed. Progr. = programme; Wk = weekly; No. = number; % Acc. = percentage accuracy for the weekly strategy running record texts. The two dotted horizontal lines denote the beginning of the strategy and self-belief interventions. The solid line denotes the beginning of 1999.

APPENDIX P

SUSAN

EXAMPLES OF MISCUES

Pronouns

Tense

Two Word Contractions

Similar Words

Table P1. Pronoun miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Pron.	Miscues
1	9.5	I/it/sc; you/how/sc; you/your/x; I/he/sc; they/there/sc; to/my/sc; the/they/x
2 NR		
3		it/it's/x; we/can we/sc
4		in/it/sc; his/the/x; his/the/x; his/he/x
5		her/hard/sc; the/she/sc; he/hit/sc
6 NR		
7		I/you/x; it/I/x
8		her/an/x; -/me/x; he/it/sc
9 NR		
10	13	more/me/sc; they/there/sc; I/-/sc; I/he/x
11 NR		
12 NR		
13		he/hey/sc; him/me/x; I'll/he'llsc
14 NR		
15		She/he/sc; with/you/sc; her/the/x
16 NR		
17 NR		
18 NR		
19		---
20		he/had/sc
21 NR		
22 NR		
23	20	they/there/x; they/it/that/sc; he/we/x
24 NR		
25		they/the/sc; it/if/sc; it/I sc
26		-/these/x
27 NR		
28		there/they/sc; our/the/x
29 NR		
30 NR		
31		She/a/sc
32		---

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue not self-corrected; No. = number; NR = no running record; Progr. = programme; Pron. = pronoun; Wk = week. The self-correction rate was 44% for these pronouns.

Table P2. Tense miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of p.t. verbs or a.t.	Miscues
1		wasn't/wouldn't/x; didn't/don't/x
2 NR		
3		works/worked/x; experienced/experience/x; didn't/don't/sc; can't/could/x
4	24	sat/sits/x; rowed/rows/x; glanced/glances/x; flew/fly/x; shouted/shouts/x; has/had/x; flew/fly/x; wrapped/wraps/x; began/begins/x; pull/pulls/x
5		rise/rose/x; rode/ridden/x; paddling/paddled/x
6 NR		
7		like/liked/x; hanging/hung/x
8		knew/know/sc
9 NR		
10		met/meet/x; was/are/x
11 NR		
12 NR		
13	8	gathering/gathered/x; hissed/hisses/x; gave/give/x; threw/has thrown/x
14 NR		
15	21	shrieked/shrieks/x; lead/leads/x; trailed/trail/x; could/can/x; didn't/don't/x; tripped/trip/x; stumbled/stumble/x; shoved/shoves/x; looked/looking/x; gave/gives/x; didn't/doesn't/x; making/make/x
16 NR		
17 NR		
18 NR		
19		spun/spin/x
20		---
21 NR		
22 NR		
23	8	began/been/x; like/liked/sc; disagreeing/designed/x
24 NR		
25		---
26		---
27 NR		
28		don't/didn't/x
29 NR		
30 NR		
31		look/looked/x; couldn't/can/t/x
32		---
33 NR		

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue is not self-corrected; T = the correct word was supplied; a.t. = verbs of all tenses; p.t. = present tense verbs; No. = number; NR = no running record; Progr. = programme; Wk = week. The self-correction rate for these verbs = 18%

Table P3. Miscued contractions from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Contr.	Miscues
1		could/couldn't/x
2		
3	32	was/wasn't/sc; we/we're/sc; well/we'll/sc; can't/could/x; we/we've/sc; it/it's/sc
4		these/there's/sc
5		---
6 NR		
7		---
8		had/hadn't/sc
9 NR		
10		I/I've/sc
11 NR		
12 NR		
13		they're/they've/x; there's/there are/sc; he/he's/sc
14 NR		
15	16	they're/they've/sc; can't/aren't/x; she's he's/sc
16 NR		
17 NR		
18 NR		
19		didn't/did/sc
20		---
21 NR		
22 NR		
23		---
24 NR		
25		---
26		---
27 NR		
28	12.5	that/that'd/x
29 NR		
30 NR		
31		---
32		---
33 NR		

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; No. = number; NR = no running record; Progr. = programme; Contr. = contraction; Wk = week. x = miscue is not self-corrected. The self-correction rate for these contractions was 36 %.

Table P4. Miscues involving confusions of: from, for, of and form from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total No.	Miscues

1		
2		
3		---
4		---
5		---
6		
7		---
8		---
9		---
10		
11		
12		
13		---
14		
15		from/forms/sc
16		
17		
18		
19		for/from/x
20		---
21		
22		
23		---
24		
25		---
26		---
27		
28		---
29		
30		
31		---
32		from/of/x
33		

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue was not self-corrected; No. = number; NR = no running record; Progr. = programme; T = the correct word was supplied; Wk = week. The self-correction rate for these similar words was 50%.

Table P1a. Examples of pronoun miscues from Table P1 within their text context.

Progr. Wk No.	Selected Miscues in Context
1a	I liked the attention I/it/sc brought me.
1b	You/How/sc do other kids react to your being vegetarian?
1c	… react to you/your/x being vegetarian?
1d	I didn't want to eat something that was dead but I/he/sc still hassled me.
1e	The say, --- . Then they/there/sc are a lot of people ---
1f	It's as if they want to/my/sc approval ---
1g	When they visit, the/they/x complain about the lack of it.
13a	"Look out! He/hey/sc! He's getting away
13b	Solomon's clinging --- .He's hissing now. Paul sees him/me/x.
13c	I take the stone. --- Solomon's holding on but he's weak. There's no way he can escape. I'll/He'll/sc have to ---
23a	They had lived in --- They/there/sc had been a playground.
23b	--- the horse must have been a robot, but they/the/that/sc didn't matter.
23c	Some days Saapi said, "He/We/x could swap.
28a	--- that we were there. There/They/sc were too busy gobbling up scraps ---

Note: Each miscue is listed first followed by the correct text version. x = the miscue is not self-corrected; sc = the miscue is self-corrected; Progr. = programme; Wk = week; No. = number.

Table P2a. Examples of present tense miscues from Table P2 within their text context.

Progr. Wk No.	Selected Miscues in Context
3a	We're doing something like thirty international festivals this year. So it works/its worked/x out ---
3b	We are getting more experience/experienced/x
3c	We'll be in Hawaii next year. --- I didn't/don't/sc know
3d	Kite flying is a dangerous job. If we can't/could/x choose ---
13a	They're gathering/gathered/x around Solomon
13b	He hissed/hisses/x at us, even when we give him food.
13c	--- even when we gave/give/x him food
13d	One of the boys has threw/thrown/x a stone.
31a	Every few minutes I'd look/looked/x in the direction ---
31b	"they couldn't/can't/x have sniffed out the food yet.

Note: Each miscue is followed by the correct text version. x = miscue is not self-corrected; sc = miscue is self-corrected; Progr. = programme; Wk = week; No. = number.

Table P3a. Examples of miscues involving two words contracted together from Table P3 within their text context.

Progr. Wk No.	Selected Miscues in Context.
3a	My family was not so pleased – and I was/wasn't/sc making much money.
3b	I don't know where after that. We/we're/sc doing something like thirty international festivals.
3c	So it/it's/x worked out well ---
3d	Well/we'll/sc launch now.
3e	Kite flying is a dangerous job. If we can't/could/x choose our times ---
3f	--- when conditions aren't perfect. We/we've/sc got a truck ---
15a	--- into the middle of the crowd. They're/they/sc aren't expecting ---
15b	They can't/aren't/x expecting an attack ---
15c	"You pigs!" Alice shrieks. --- And she/she's/sc pushing ---
28	"Hey great," said Jane. "That/that'd/x soon wake them up. ---

Note: Each miscue is followed by the correct text version. x = miscue not self-corrected; sc = self-corrected; Progr. = programme; Wk = week; No. = number.

Table P4a. Examples of miscues involving from/for/of and form within their text context.

Progr. Wk No.	Selected Miscues in Context
15	The mob turns the circle inside out, and from/forms/sc again ---
19	--- or to the clothes washing machine. For/from/x the washer ---
32	One head cautiously popped out from/of/x the tent ---

Note: Each miscue is followed by the correct text version. x = miscue is not self-corrected; sc = miscue is self-corrected; T = The correct text word is supplied; Progr. = programme; Wk = week; No. = number.

APPENDIX Q

SUSAN

INITIAL-LETTER STRATEGY

Table Q1. Susan's one-syllable initial-letter strategy miscues for weeks 10 – 23 from the strategy running record series.

Progr. Wk No.	Initial-letter One-Syllable Miscues
10	can't/can/x; last/loud/low/x; make/mask/x; face/fact/sc
12	large/long/x; strength/stretch/x; shoved/should/sc; true/tune/x
13	were/was/x; choker/choke/x; little/light/x; howl/high/sc; an/ah/x
14	from/for/sc; lowering/lure/x; which/with/sc; twenty/twelve/x; sets/set/sc; it/its/sc; sit/set/sc; spot/stop/sc; doesn't/does/x
17	woods/words/sc; they/that/x
18	---
21	trucks/track/x; rote/route/x
23	him/his/sc; his/this/x; well/will/sc; darkened/drunk/x

Note: The miscue is given first followed by the correct text word. x = the miscue is not corrected; sc = the miscue is self-corrected. Progr. Wk No. = programme week number.

Table Q2. Susan's two-syllable initial-letter strategy miscues for weeks 10 – 23 from the strategy running record series.

Progr. Wk No.	Initial-letter Two-Syllable Miscues
10	you will/you'll/x; sustained/sussed/x; even/ever/x; begin/began/x; sound/standard/sc; tried/tired/x
12	person/parties/x; friction/function/sc; stalked/strolled/stalked/x
13	clawed/chewed/sc; drainpole/drainpipe/x; tangled/tilted/x
14	skipper/striker/x; should/shouldn't/sc; beneath/behind/x; above/about/x; chases/changes/sc
17	ox/oxen/x; rest/result/x; barely/badly/sc
18	barley/barely/x; oxen/ox/oxen/x lay/laying
21	holy/holly/sc; lovely/lively/x; village/valleys/x
23	master/mister/x; waiting/wanting/sc; flasher/flourish/x; Holy/holly/x; sag/snugly/sc

Note: The miscue is given first followed by the correct text word. x = the miscue is not corrected; sc = the miscue is self-corrected. Progr. Wk No. = programme week number

Table Q3. Susan's three-syllable initial-letter strategy miscues for weeks 13-21 from the strategy running record series.

Progr. Wk No.	Initial-letter Three-Syllable Miscues
10	called/challenged/sc; addition/attraction/x
12	what/wandering/sc; fiddled/fidgeted/x
13	---
14	---
17	---
18	---
21	---
23	note/noticed/x

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table Q1a. Selected one-syllable initial-letter miscues in their text context.

Progr. Wk No.	Selected One-Syllable Miscues in Context
10a	Dead Rat's playing first, so I can't/can/x finish ---
10b	--- Performing to its last/loud/low standard
10c	--- the quality of the school sound system helped make/mask/x the fact.
10d	--- the quality of the school sound system helped mask the face/fact/sc.
14a	Trolling is dragging a hook and lowering/lure/x slowly through the water.
14b	It's a reef out in the middle of the lake --- which/with/sc deeper water all round.
14c	--- about twenty/twelve/x metres below the surface.
14e	Now sit/set/sc the drag on the reel ---
14f	Just enough to spot/stop/sc any more line running out ---
14g	If one of you doesn't/does/x get a strike I'll stop the boat ---
23a	--- and edged him/his/sc team carefully ---
23b	A pint on his/this warm day, ---
23c	"Well/will/sc you be going far?"
23d	He darkened/drank/x his beer deliberately.

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table Q2a. Selected two-syllable miscues within their text contexts.

Progr. Wk No.	Selected Two-Syllable Miscues in Context
10a	--- you will/you'll/x get expelled.
10b	"I've got it sustained/sussed/x," Mark assured her.
10c	You can't ever/even/x be a rock star
17a	His oxen had worked, digging ---. And there was the rest/result/x now ---
17b	Money was barely/badly/sc needed, ---
23a	You'll be waiting/wanting/sc a tow, ---
23b	Jack responded with a flasher/flourish/x of his whip, ---
23c	Early evening saw him sag/snugly/sc camped in a clearing

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table Q3a. Selected three-miscues within their text contexts.

Progr. Wk No.	Selected Three-Syllable Miscues in Context
10a	"Why not?" He called/challenged/sc."
10b	"It'd be part of the addition/attraction/x."
12a	I just happened to be what/wandering/sc near the fire escape ---
12b	Lucy fiddled/fidgeted/x with her watch.
23a	He noticed/noted/x with surprise ---

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

APPENDIX R

TOM

EXAMPLES OF MISCUES

Pronouns

Tense

Two Word Contractions

Table R1. Pronoun miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Pron.	Miscues
1		three/these/sc; the/this/x
2		this/him/his/sc; —/I/x; his/the/sc
3	16	this/his/x; this/his/x; and/he/x
4		^I/x; the/they/sc
5		you/kids/sc; us/use/x
6	NR	
7		---
8	NR	
9		---
10		---
11	NR	
12		the/she/x; I/its/sc
13		you/we/x
14		—/you/x; you/Mum/x
15		There/there's/x; them/me/sc
16	NR	
17	NR	
18		the/he/x; that/the/sc
19	NR	
20		---
21	NR	
22	NR	
23		we/he/x
24	NR	
25	25	his/its/sc; he's/has/x
26		---
27		---
28		his/this/x
29	10	those/these/x; the/that/sc
30		he's/here's/x
31	NR	
32		he/his/sc
33	NR	

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue not self-corrected; No. = number; NR = no running record; Progr. = programme; Pron. = pronoun; Wk = week; ^ = word added that is not in the text.

Table R2. Tense miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of past & p.t. verbs	Miscues
1		making/make/x; flying/fly/x
2		grew/grows/x
3	18	rested/rests; shouted/shouts/x; flew/fly/x; smiled/smiles/x; bended/bends/x; pulled/pulls/x;
4		eats/ate/x
5		---
6	NR	
7		swang/swung/x; freshing/fresh/x
8	NR	
9	11	jabbed/jabbing/sc; shredded/shreds/sc; like/liked/x; want/wanted/x
10		---
11	NR	
12		---
13		---
14		---
15		met/meet/x
16	NR	
17	NR	
18		had/has/x
19	NR	
20		---
21	NR	
22	NR	
23		have/was/x; taken/taking/x
24	NR	
25		---
26	20	scratched/scratches/sc; sharpened/sharp/sc
27		---
28	19	fly/flying/x; decided/decides/x; ran/runs/x; laughs/laughed/x drew/drawn/sc
29		---
30		padding/padded/sc
31	NR	
32		works/worked/sc
33	NR	

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; . x = miscue is not self-corrected; T = the correct word was supplied; p.t. = present tense verbs; past = past tense verbs No. = number; NR = no running record; Progr. = programme; Wk = week.

Table R3. Miscued contractions from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Contr.	Miscues
1	53	well/we'll/x; would/wouldn't/x; always/well/we'll/x; well/we'll/x; we/we'll/x; we/we've/sc; would/wouldn't/x/sc; we/we've/sc; won't wait/sc; is/aren't/x
2	38	I/I've/x; that/that's/x; won't/want/sc
3		we/we'll/x; there's/they're/sx
4		don't/didn't/x; they/they're/sc; won't/went/sc
5		---
6	NR	
7		couldn't/could/x
8	NR	
9	25	won't/want/wanted/x; won't/wanted/sc; she's/she'd/x; it/it'll/sc
10		I/I'm/x; who/who'll/x
11	NR	
12		I/its/sc; don't/didn't/x;
13		don't/didn't/x; everything/everything'll/x; someone/someone's/sc
14		we will/we'll/x; don't/didn't/x
15		there/there's/x
16	NR	
17	NR	
18		---
19	NR	
20	18	don't/doesn't/x; he's/he/x;
21	NR	
22	NR	
23		they/they'll/sc
24	NR	
25		he's/has/x
26		---
27		doesn't/does/x; they'll/they're/x
28		---
29		he/he's/x
30		he's/here's/x
31	NR	
32		that/that's/x; they/they'll/x
33	NR	

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; No. = number; NR = no running record; Progr. = programme; Contr. = contraction; Wk = week; x = miscue not saelf-corrected.

Table R1a. Examples of pronoun miscues from Table R1 within their context.

Progr. Wk No.	Selected Miscues in Context
3a	--- glances at the white canvas bag on the stern seat of this/his/x boat.
3b	It holds this/his/x neatly folded suit, ---
3c	D'Arcy smiles to himself. And/He/x bends and pulls.
18a	--- the shove between the shoulders that Alice gives him. Over the/he/x goes on the gravel
18b	Paul and that/the others will kill Solomon.
29a	You wouldn't get me up on one. But those/these/x cowboys ---
29b	Right now, the/that/sc bull, he's got only one thing on his mind: ---
32	--- jump from he/his/sc horse, ---

Note: Each miscue is listed first followed by the correct text version. x = the miscue is not self-corrected; sc = the miscue is self-corrected; Progr. = programme; Wk = week; No. = number.

Table R2a. Examples of present tense miscues from Table R2 within their text context.

Progr. Wk No.	Selected Miscues in Context
2a	I did almost nothing but making/make/x --- kites.
2b	I did almost nothing but --- and flying/fly/x kites.
9a	She was jabbed/jabbing/sc me with her elbow.
9b	--- the material hung in shredded/shreds/sc.
9c	But I like/liked/x our old sofa ---
9d	"That woman won't/want/wanted/x two hundred dollars! ---
23a	We have/He was/xx taking a nip at the other one.
23b	We have taken/he was taking/xxx a nip at the other one.
28a	And his hat went fly/flying/x, ---
28b	---, he decided/decides/x Baldy's a killer.
28c	He ran/runs/x for his life ---
28d	The crowd laughs/laughed/x!
28e	He had a look at the bronc he'd drew/drawn/sc: ---

Note: Each miscue is followed by the correct text version. x = miscue is not self-corrected; sc = miscue is self-corrected; Progr. = programme; Wk = week; No. = number.

Table R3a. Examples of miscues involving two words contracted together, from Table R3, within their text context.

Progr. Wk No.	Selected Miscues in Context.
2a	How do you store your ideas. I/I've/x never kept a diary, ---
2b	--- two or more ideas join together to make one story --- that/that's/x magic!
2c	--- to get the story out of my head. If I won't/want/sc to clear my head ---
14a	The shed's full of things we don't want. We will/we'll/x have a garage sale ---
14b	"Why don't/didn't you stop him?"
20a	Alice doesn't care. She don't/doesn't/x *care!*
20b	She's not afraid. He's/he/x got away, ---
32a	There's a special clock that/that's/x worked ---
13b	The calf steps into the loop, the cowboy jerks it up. They/they'll/x always try and get both feet.

Note: Each miscue is followed by the correct text version. x = miscue not self-corrected; sc = self-corrected; Progr. = programme; Wk = week; No. = number.

APPENDIX S

TOM

INITIAL-LETTER STRATEGY

Table S1. Tom's one-syllable initial-letter strategy miscues for weeks 12 – 22 from the strategy running record series.

Progr. No.	Initial-letter One-Syllable Miscues
12	through/though/x; tow/tough/x; crashed/cried/x; I/I'm/sc; Joe/Joy/x
13	the/this/x; thought/though/x; came/come/x; catch/case/x; thought/though/x; day/dug/x; he/his/sc; thought/thaw/though/x; so/some/x
14	flax/flat/sc; which/while/x; the/that/sc; bank/backs/sc
15	drunk/drank/x; drunk/drank/x; he's/he/x; wearing/wore
18	head/hand/x
19	bit/bet/x; was/with/x
20	troll/tore/x; of/off/x; to/top/sc
21	his/her/x; bit/bent/sc; it is/its/x; jug/jig/x
22	---

Note: The miscue is given first followed by the correct text word. x = the miscue is not corrected; sc = the miscue is self-corrected. Progr. Wk No. = programme week number.

Table S2. Tom's two-syllable initial-letter strategy miscues for weeks 12 - 22 from the strategy running record series.

Progr. Wk No.	Initial-Letter Two-Syllable Miscues
12	realised/reached/x; slip/simply/sc; stage/single/x
13	Dool/Dublin/x; don't/didn't/x
14	side/single/x; other/office/sc; look/local/sc
15	rhyme/rhythm/x
18	---
19	Low/Lyell/x
20	powdered/poured/x; somewhere/somehow/sc
21	Mr/Mrs/x; riched/reached/sc; Mr/Mrs/x; lettered/ladled/x; roading/roaring/x; Flower's/Frenchman's/sc
22	treaties/tourists/sc

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table S3. Tom's three-syllable initial-letter strategy miscues for weeks 12 – 22 from the strategy running record series.

Progr. Wk No.	Initial-Letter Three-Syllable Miscues
12	replace/represent/x
13	---
14	courageous/curious/x
15	---
18	---
19	agreed/arranged/x
20	secured/selected/sc
21	---
22	---

Note: The miscue is given first followed by the correct text word. x = the miscue is not corrected; sc = the miscue is self-corrected. Progr. Wk No. = programme week number.

Table S1a. Selected one-syllable initial-letter miscues in their text context.

Progr. Wk No.	Selected One-Syllable Miscues in Context
12a	--- how I have pushed myself through/though/x I know I couldn't have done it ---
12b	On the rope course all the tasks were really tow/tough/x, but I was managing ---
12c	---simply broke down and crashed/cried/x — and --- I'm not the crying type.
12d	--- and as you well know, Mum, I/I'm/sc not the crying type.
15a	They talked, and drunk/drank/x, ---
15b	--- and talked some more, and drunk/drank/x some more, ---
15c & d	--- considering the heavy boots he's wearing/he wore/xx.
21a	Mr/Mrs/x Perotti the shopkeeper, ---, rushed out from his/her/x doorway ---
21b	She/bit/bent/sc over him, ---
21c	It is/It's/x not blood.
21d	--- how to dance an Irish jug/jig/x

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table S2a. Selected two-syllable initial-letter miscues within their text contexts.

Progr. Wk No.	Selected Two-Syllable Miscues in Context
12a	--- but I was managing well until I realised/reached/x one which beat me.
12b	I fell, and slip/simply/sc broke down and cried ---
12c	--- and walked across a stage/single/x-rope suspension bridge ---
14a	The buildings --- faced each other across the side/single/x street, ---
14b & c	Into that single street were crammed houses, --- and the other/office/sc of the look/local/sc newspaper.
21a	But Mr/Mrs/x Perotti the shopkeeper, ---
21b	But Mrs Perotti --- rushed/reached/sc out from her doorway ---
21c	--- and then Mr/Mrs Perotti/x began to laugh and laugh.
21d	--- when he'd gone into his storeroom, he'd lettered/ladled/x in spoonfuls of raspberry jam ---
21e	--- telling The Flower to stop his roading/roaring/x because he wasn't dead after all.
21f	He put an arm around the Flower's/Frenchman's/sc shoulders.

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table S3a. Selected three-syllable initial-letter miscues in their text context.

Progr. Wk No.	Selected Three-Syllable Miscues in Context
12	--- what things people will be picking up to replace/represent/x me.
14	--- the most courageous/curious/x of all New Zealand gold towns.
19	--- and a duel was agreed/arranged/x.
12d	He secured/selected/sc two lead balls ---

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

APPENDIX T

TOM

ATTITUDE TO READING

AVOIDANCE BEHAVIOURS

Background supplied by Tom's Grandmother

Tom and his Mother lived on their own through Tom's early years of schooling until Tom was eight. His Mother read to him a lot and he was progressing well at school.

His Mother entered a new relationship. There was a lot of yelling and Tom attended a lot of different schools.

Tom and his family moved to Australia. Because Tom did not get on with his stepfather he moved back to New Zealand to live with his Grandmother. He visited his family in Australia for the Christmas vacation.

His Grandmother is concerned because the videos that Tom chooses to watch are for young children (e.g. Pete's Dragon by Walt Disney). He also often associates socially with younger children at home.

The school Guidance Counsellor was informed of Tom's problems but Tom refused to see him.

Health

Tom had continual sinusitis throughout the programme. Tom frequently complained of feeling tired but attributed this to going to bed late. Early in 1999 he was referred to the school nurse. Medical attention was arranged for and Tom was prescribed medication. He often forgot to take it.

Attitude to Reading

28.7.98 Reading's dumb

30.7.98 Everybody in my family can read but me. That's why I think reading's dumb.

11.8.98 "See you Thursday." Tom, "Don't count on it."

18.8.98 Tom was going to discuss leaving the programme with his Grandmother

20.8.98 Tom said he had phoned his Mother last night and she had said he didn't have to come.

He was told he needed a note from home to leave. He would have to come today as he didn't have a note. His Grandmother would be contacted about his attendance.

Tom, "She will say I have to come."

24.8.98 Tom did not attend on time. He was collected from class where he was being admonished about his behaviour. He was very angry but settled into the lesson fairly well.

31.8.98 Self-belief portion of the programme started at this point instead of 6.11.98 as it was felt Tom needed to be convinced that he had the ability to be a good reader, that he needed to work hard at using the knowledge and strategies being taught in the programme and that he had the control.

7.9.98 Tom stated "it's (the programme's) dumb" and he wanted to stop.
Very difficult today. Has a detention tonight.

22.10.98 Tom replied "Maybe" when asked if he would start reading.
Tom's Grandmother reported that he was reading things in the newspaper that he was interested in and asking what the words were. This was a new behaviour.

5.11.98 Enjoyed *Ludicrous Lies*. Found it difficult to read but persevered.

9.11.98 Tom said he was not coming for tuition next year. He was told he needed a note to leave.

18.11.98 Tom asked how long he had the reading programme for and was told that it went for another two terms. He replied, "Oooh only another two terms."

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16.2.99 Reading *The Bumboys.* Tom said he didn't want to read so turn about was suggested. However he kept on reading. He worked at trying to identify the words'

Had to be collected from class for all lessons except occasionally when there was an activity he wished to avoid or he thought he was in trouble.

4.3.99 Collected from a noisy classroom. Tom took most of the lesson to wind down. Reverted to his "reading's dumb," behaviour again.
Tom said he doesn't want to learn to read "Reading's dumb."

31.5.99 Change in attitude over the last two lessons. Tom still reads paragraph about but he does not skip as many words.

October Checked with his form teacher to find out what time he was to attend so he did not miss the assessment session.

Avoidance Behaviours

Tom was punctual for his lessons in 1998 when he was in a Special Needs class where reading tuition was valued and he was praised for being organised and punctual. He had to be collected from class for nearly every lesson in 1999. He lost one third of his teaching time through these two terms.

Took a long time to choose journal articles for running records and reading material in lessons.

Would only read paragraph about during lesson and always manoeuvred to read the shorter paragraph.

Rarely showed persistence. Often skipped difficult words after one initial attempt and would not return to them when requested to.

Until he started *Ludicrous Lies* he always tried to choose very easy reading material with a lot of pictures which he could read without mistakes.

Worked at trying to deflect my attention from the teaching programme.

Disruptive behaviour such as putting forehead on desk and banging on the desk.

"Reading is dumb" attitude.

APPENDIX U

DAVID

EXAMPLES OF MISCUES

Pronouns

Tense

Two Word Contractions

Similar Words

Table U1: David's Pronoun miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Pron.	Miscues
1		---
2		her/Mr/x
3	12	he/his/sc; him/them/x;
4		you/they/sc; him/Mrs/Ms/x
5 NR		
6		he/his/x; our/awesome/x;
7		---
8		it/that/sc; you/they/x
9		it/that/sc
10		I/the/sc; I/to/sc; my/I/sc
11 NR		
12	22	it/that/sc; that/they/x; we/were/x; I/it/sc
13		a/I/sc; —/it/sc
14		that/this/sc; a/I/sc
15NR		
16		I/a/ sc; I/it/x;
17 NR		
18		their/our/sc; who/was/sc
19 NR		
20		them/when/sc
21		---
22 NR		
23		---
24 NR		
25		---
26	23	my/the/x; I/you/x; who/how/sc
27	35	I/and/sc; the/our/x; him/her/sc; the/my/x; his/her/x; him/her/x
28		a/I/sc
29		his/her/x; her/that/sc; I/come/sc
30 NR		
31		I/comesc; her/his/x
32		It/at/sc; the/these/thick/sc; they/you/x; our/their/x
33		his/her/x; he/hi/hey/x

Note: For each example the miscue is listed first followed by the word used in the text. x = the miscue is not self-corrected; sc = the miscue is self-corrected; No. = number; NR = no running record; Progr. = programme; Pron. = pronoun; Wk = week.

Table U2. David's tense miscues from each weekly, fluency running record assessment.

Progr. Wk No.	% of p.t. verbs or a.t.	Miscues
1		---
2	10	will/went/sc; stare/stared/x; meet/met/sc
3		Locked/lock/x; wouldn't/won't/x; won't/want/x
4		---
5 NR		
6		shine/shining/x; don't/didn't/sc; get/got/x; could/come/sc
7		said/says/x; coming/come/x; weren't/want/sc
8		keep/kept/sc
9		wouldn't/won't/x
10	40	spit/spat/x; guessed/guess/x; gets/got/x; seems/seemed/sc; comes/came/x; was/is/x
11NR		
12		talked/talking/x
13		---
14		likes/liked/x
15NR		
16		going/gone/sc; keeped/kept/sc;
17NR		
18		suppose/supposed/x;
19NR		
20		---
21		guessed/guess/x
22NR		
23	18	lead/led/sc; taking/taught/x; had/having/hiding/sc
24NR		
25		came/have/sc
26		say/said/x; got/give/x
27		started/starts/x; got/gone/sc
28		thought/think/sc; teached/teach/x; called/come/x
29		stretching/stretched/x; didn't/doesn't/x; took/take/sc; go/going/sc
30NR		
31	15	would/went/sc; would/worked/walked/sc; lead/laughed/x
32		flow/flew/sc; shouted/should/x; playing/play/x
33		make/making/sc; lead/leaned/x

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue is not self-corrected; T = the correct word was supplied; a.t. = verbs of all tenses; p.t. = present tense verbs; No. = number; NR = no running record; Progr. = programme; Wk = week.

Table U3. David's miscued contractions from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total Contr.	Miscues
1		could/couldn't/sc
2	33	that is/that's/sc; don't/didn't/don't/x;
3		they/they're/sc; wouldn't/won't/x; every/I've/sc; he's/his/x; his/he's/x; didn't/doesn't//x; his/he's/x
4	67	you are/you're/sc; you/you've/x; what/whatn't/wasn't/sc; is he/he's/x;
5 NR		
6		couldn't/cousin/x; he/his/he's/sc; don't/didn't/sc
7		weren't/want/sc; I'm/I'll/x; I'm/I am/x
8		did/didn't/doubt/x
9		wouldn't/won't/x
10		wouldn't/wasn't/sc
11 NR		
12		---
13		---
14		he'd/he/x;
15 NR		
16		he'll/he'd;/sc;
17 NR		
18	200	couldn't/could/sc; wasn't wondered/sc
19 NR		
20		had/hadn't/sc
21		---
22 NR		
23		couldn't/don't/x
24 NR		
25		---
26	67	I'd/I would/x; its/it/its/x
27		---
28	150	young/you're/young/x; that/that end/that didn't/ that'd/sc; doesn't/don't/sc
29		didn't/doesn't
30 NR		
31		---
32		---
33		---

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; No. = number; NR = no running record; Progr. = programme; Contr. = contraction; Wk = week. x = miscue is not self-corrected. The self-correction rate for these contractions was 36 %.

Table U4. David's miscues involving confusions of: from, for, of and form from each weekly, fluency running record assessment.

Progr. Wk No.	% of Total No.	Miscues
1		---
2		---
3	33	from/of/x
4		---
5 NR		
6		---
7		---
8	100	for/from/sc; for/of/sc
9		for/from/sc
10		---
11 NR		
12		---
13		---
14		---
15 NR		
16		---
17 NR		
18	25	of/from/sc
19 NR		
20		---
21		---
22 NR		
23		---
24 NR		
25		---
26		---
27		---
28		---
29		---
30 NR		
31		---
32	33	from/of/x
33		---

Note: For each example the miscue is listed first followed by the word used in the text. sc = miscue is self-corrected; x = miscue was not self-corrected; No. = number; NR = no running record; Progr. = programme; T = the correct word was supplied; Wk = week.

Table U1a. Examples of pronoun miscues from table U1 within their text context.

Progr. Wk No.	Selected Miscues in Context
3a	Rudi, Rudi, And he/his/sc sister Trudi
3b	And his sister Trudi. Lock him/them/x in the dunny, ---
12a	---maybe Dad was a secret agent, and I felt mighty proud about it/that/sc.
12 b&c	--- that job at Oamaru that/they/x we/were/x talking about ---
12d	After a while I/it/sc didn't seem to be so big, ---
18a	---there was a whole crowd of men on their/our/sc lawn ---
18b	I guess that who/was/sc old Tessie ---
27a	She'd never have known I/and/sc goodbye one fat smelly dog!
27b	Chrissie is part of the/our/x family.
27c	She's not part of the/my/x family.
27d	She's not part of my family. I hate him/her/sc.
27e	--- have her stuffed one day, then screw wheels on his/her/x feet ---
27f	--- screw wheels on his/her/x feet and use him/her/x as a garden seat.

Note: Each miscue is listed first followed by the correct text version. x = the miscue is not self-corrected; sc = the miscue is self-corrected; Progr. = programme; Wk = week; No. = number.

Table U2a. Examples of present tense miscues from table dt5 within their text context.

Progr. Wk No.	Selected Miscues in Context
2a	"But your dad will/went/sc," said Mum
2b	--- a neighbour stopped and/to/x stare/stared/x.
2c	Mum went to/and/x meet/met/x Mr Mannering, ---
16a	L It was going/gone/sc already.
16b	I keeped/kept/sc imagining Dad in court ---
18a	I suppose/supposed/x she meant me,
29a	Chrissie was stretching/stretched/x out in the sun.
29b	"See Mum she didn't/doesn't/x want to go!"
29c	Mum yelled --- "and took/take/sc off that jacket."
29d	Time to go/et goingsc.

Note: Each miscue is followed by the correct text version. x = miscue is not self-corrected; sc = miscue is self-corrected; Progr = programme; Wk = week; No. = number.

Table U3a. Examples of miscues involving two words contracted together from Table U3 within their text context.

Progr. Wk No.	Selected Miscues in Context.
2a	"That is/that's/sc a lot of families for one house," ---
2b	"You don't/didn't don't/x even remember him."
18a	I couldn't/could/sc hear a lot of people talking, ---
18b	I supposed she meant me. I wasn't/wondered/sc if she was sorry enough ---
28a	"I think young/you're/youngx lady, that you need to spend more time ---
28b	--- And Jason's new leather jacket (that/that end/that didn't/that'd/sc teach him to be smart), ---
28c	--- and went to find the dog. "Doesn't/don't/sc forget the pooper-scooper ---

Note: Each miscue is followed by the correct text version. x = miscue not self-corrected; sc = self-corrected; Progr. = programme; Wk = week; No. = number.

Table U4a. Examples of miscues involving from/for/of and form within their text context.

Progr. Wk No.	Selected Miscues in Context
3a	--- tell him not to take any notice from/of/x a stupid pack of kids.
8a	--- and help tidy things up for/from/sc the play.
8b	Anyway he's not really a friend for/of/sc mine.
9	I knew I'd get into trouble for/from/sc Dad ---
18	I guess that was old Tessie of/from/sc the milk bar.

Note: Each miscue is followed by the correct text version. x = miscue is not self-corrected; sc = miscue is self-corrected; Progr. = programme; Wk = week; No. = number.

APPENDIX V

DAVID

INITIAL-LETTER STRATEGY

Table V1. David's one-syllable initial-letter strategy miscues for weeks 11 – 21 from the strategy running record series.

Progr. Wk No.	Initial-letter One-Syllable Miscues
11	have/had/x; an/a/sc; head/hands/sc; hay/hi/x
13	Jack/Joe/x; could/came/sc; with/was/sc; talk/tell/sc; he/his/sc
14	out/off/x; Jack/Joe/xfrom/for/sc; has/had/x
15	to/too/x; waste/wash/sc; he's/his/sc; liked/look/sc
17	Mother/mouth/x; a/and/sc; did/do/x; crane/creek/x
18	face/fast/sc; pockets/pack/sc; clean/change/sc;
19	didn't/did/sc
20	dark/drain/x; rang/ring/sc; readed/read/sc
21	out/off/x; felt/feet/sc; that/that's/sc; I'd/I/sc

Note: The miscue is given first followed by the correct text word. x = the miscue is not corrected; sc = the miscue is self-corrected. Progr. Wk No. = programme week number.

Table V2. David's two -initial-letter strategy miscues for weeks 11 – 21 from the strategy running record series.

Progr. Wk No.	Initial-letter Two-Syllable Miscues
12	could have/could've/x
13	---
14	went/wanted/sc; would/wouldn't/sc
15	he'd/he would/he'd/x how/how's/sc; didn't/don't/sc
17	started/stared/sc; shook/shrugged/x; station/section/x; around/across/x; planted/putting/x
18	towards/trying/sc;
19	didn't/did/sc; listening/library/x
20	hiding/hidden/x; pipe/platform/x; stopped/spooked/x; along/away/x; tracking/tracker/x; she/she'd/sc
21	put/pulled/sc; shoes/sneakers/x; wandered/waded/x; that/that's/sc

Note: The miscue is given first followed by the correct text word. x = the miscue is not corrected; sc = the miscue is self-corrected. Progr. Wk No. = programme week number.

Table V3. David's three-syllable initial-letter strategy miscues for weeks 11-21 from the strategy running record series.

Progr. Wk No.	Initial-letter Three-Syllable Miscues
11	---
13	---
14	---
15	perhaps/probably/x
17	---
18	---
19	
20	---
21	---

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table V1a. Selected one-syllable initial-letter miscues in their text context.

Progr. Wk No.	Selected One-Syllable Miscues in Context
11a	We never have/had/x candles.
11b	An/a/sc beanpole Prime Minister called Joe ---
11c	As I washed my head/hands/sc ---
11d	Hay/Hi/x Rachael
15a	--- and turned the TV ona to/too/x loud ---
15b	--- and I'd have to waste/wash/sc the dishes.
15c	He's/His/sc face never changed: ---
15d	"You always liked/look/sc cross when he's here," ---
20a	I shone the torch along the dark/drain/x
20b	First she'd rang/ring/sc around my friends.
20c	I'd readed/read/sc about tracker dogs.

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table V2a. Selected two-syllable miscues within their text contexts.

Progr. Wk No.	Selected Two-Syllable Miscues in Context
14a	--- and she talked about all the students she went/wanted/sc for boyfriends.
14b	If I'd been a boy, I wouldn't have even thought of being Frances's boyfriend.
17a	I started/stared/sc at her.
17b	But instead I just shook/shrugged/x and said, ---
17c	--- there was an empty station/section/x with a creek ---
17d	--- with a creek running around/across/x it.
17e	Workers had/were/x planted/putting/x drain pipes ---
19a 7 b	I sat in the pipe/public/x listening/library/x until five o'clock.
21a	Quickly I put/pulled/sc off my socks ---
21b	--- off my socks and shoes/sneakers/x.
21c	I crept out of the pipe and wandered/waded/x around
21d	That/That's/sc what it felt like.

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

Table V3a. Selected three-syllable miscues within their text contexts.

Progr. Wk No.	Selected Three-Syllable Miscues in Context
15	I sulked and thought that perhaps/probably/x Mum

Note: The miscue is given first followed by the correct text word. x and sc = uncorrected and self-corrected miscues respectively. Progr. Wk No. = programme week number.

APPENDIX W

DAVID

READING STRATEGIES

Transcriptions of David's Reading

Strategies for Fluent Reading

Causal Attribution and Self-Efficacy Ratings

Table W1. Transcriptions of excerpts of David's reading from selected strategy running records.

30.7.98 Week 1	--- the more – the more w-arn – warning signs you see about mines but more of the-the - in the - in this – in that d-d-i-s-d-ist-distance get (no) – but more of the people in that d-es-distance get their – but more of those people in that district get their money – their money for c-ut-cutting wood to c-c-a-rt – to cart the wood from the f-or for-est (*told forest*) the forests to –from the forests you need a b-u-ull (*told bullocks).*
20.8.98 Week 4	I was – I was bored in – I was born in the mid – m-id – mid sixtin (*told: sixties*) with a s-er – with a sev-er with a s-ev- - sev-ray (*told severe*) with a severe speech problem. I re-m - I remembered I was an un-help – an un-un-h-e-al – an unhealthy child al-ways (*told: unhappy*) oh an unhappy child always given – always getting into trouble. David "Big words I seem to be able to get, little words are the problem."
27. 8.98 Week 5	--- I was a bit of a pro – problem – a pr-o-blem – prob-l-em a bit of a problem to them David "I don't know why I don't trust myself.
17.9.98 Week 8	"A friend came round to – a friend came round to // dinner // a friend's coming round to dinner tomorrow," Mum said to me – "A new friend." "What's his name?" I asked. Mum grinned. "Her name's Jo-Joan *(told: Joe)* - Her name's Joe." I was so // surprised – s-u pr-sup – sup-prised supprised – I was so supprised I// I // I nearly said: "It's a him?"
12.11.98 Week 14	As if you was – As if I was just some kid. I couldn't believe it! Mum had never tr-eat – treated me like one –one before. Anyway I got myself a drink and went out to have a s-u-lk - a sulk in my room. I real-lized – I rea - real –ly – really – really – a really big sulk. I was gl-glad when Jack *(told: Joe)* when Joe didn' didn't tell st- st-ay for dinner. But he was there again a ch-a-c-ou-p-ly – a couple of breakfasts break, a couple of afternoons later.
26.11.98 Week 16	But things can't stay like this forever. You – You grow up. We me – We meet – we meet- we meet new people. Things change. "I wish they never changed," I said. And I b-i – and I bit my tongue. – and I bit *(told: burst)* and I burst into tears. I was glad when – I was glad Joe went // wasn't thereto see me crying. Things got better for a bit. Joe st-ill – still came around but Mum didn't enj-enj-enj didn't enj (*told: ignore*) ignore me so much.
18.2.99 Week 17	"We might. One day." My Mother opened a – and – sat – sh-ut shut open and shut. What do you think Rachael? I started – I stared at her. I rea-ly - really wanted to glare and shout. What about us? – What about us? But instead I just shook and said, "I don't care..." That night I decided to run away. I - I'd lie about my – my age and get a job in another city and make lots of money and live in a motel.
4.3.99 Week 19	She wouldn't start mi-missing me until about five thirty. When I got back to the eemp empty section, the workers had gone. I p-ick-ed - I picked my way down to the cr-eek – creek- and peered into the drain. Only a cr-e-c-le – a trickle ran through it. But it wasn't – would be hard to h-ide in – but it would be hard to hide in without getting wet.
11.3.99 Week 20	The itch os (come back to it) the something is – the whisper – the something whisper along – whispered along the nothingness too – the – the (*told: echoes).* I wondered what Mum would be doing. First she rang – first she'd ring around my friends. Then she'd go out the back and call out. Then she'd ring Joe – Joe - if he wasn't there - if he wasn't there already. I was too angry to c-ar to care about her being worried. Then she'd prob probably ring the police. Tracking dogs! – I – I'd reed - I'd read about tracking dogs.

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6.5.99 Week 26	There was a p-a –s - There was a pause, then I - then he said, "Where - Where you running – were you running away because you didn't want me to come and live with you or your Mother." I couldn't say no at – to that so I didn't answer. There was another pause, then Joe said quietly: "These – The same thing happened to me once."
3.6.99 Week30	"I'm cold," I said. If I had to spend a night in a drai-drain I'd become frozen up maybe for – forever. "Coming – Coming home for dr-dr - Coming home for dinner – coming home for dinner?" I cl-cl-clambered – I'm cl-I clam – cl-am – b - I climbed ouf – ou-wick-ered – a – ou (*attention drawn to "aw")* aw- awk – awkwardly out of the – s – sleeping bag, then out of the pipe. It was like getting out of pr-pr- pr-i-son - getting out of prison.
17.6.99 Week32	There was Mr. Cham-Pie-Pie-Pay (*told Pa:*) Mr Cham Pa, a nea –ow -near– a nay - a near neighbour to Mr Vibow-Vibol. They were good neighbours helping each other with – whenever there was prob- problems as-as - ack-ick-ans or –dee-ths or deaths. When there are –when there are pr – when there are pr - as settling (no) s-uck – s-uch such as ack – as ack-i-d –ents (*told: accidents*) when there are accidents or deaths. Mr Ch-amp – Cham Pa was also well known from for his pigs, which re-i – which roamed around the fields and houses of the village. Like Mr Vibol's, their pig-s were sometimes a bit of a nuisance.

Note. // = a long silent pause as David attempted to decipher a word.

Table W2. The strategies and behaviours that were emphasised in the programme to encourage more fluent reading.

3.8.98 Week 2	David whispered sounds to himself.
27.8 98 Week 5	Reading was smoother. Read "She had lovely wavy blond hair with" --- with no sounding out.
21.9.98 Week 9	Encouraged David to listen to the sounds in the words as he worked them out and to slow his reading pace so that he didn't need to keep re-running. Encouraged him to read easier text to try to attain more fluency.
24.9.98 Week 9	*Hanging:* started with sounding individual letters and couldn't get word. As soon as he tried groups of letters he could hear the word; h-ang-ing.
12.10.98 Week 10	Encouraged David to read to end of sentence without rerunning, before he backtracked to work out words he didn't know.
13.10.98 Week 10	Encouraged David to slow his pace of reading down until he could maintain an even pace without continual rerunning, both for sounding words and for one or two words, phrases and sentences. It was explained to him that when his pace was very slow he would have time to see the letter groupings and to use meaning to get more fluent reading.
15.10.98 Week 10	Using finger to track.
21.10.98 Week 11	David remembered that he should listen to what he was reading. He did not remember to reduce his pace.
26.11.98 Week 16	Used very easy text to try and eliminate continual sounding out and re-running while reading. Suggested it would be helpful to use his finger or a pen to help track the groups of letters rather than individual letters. Encouraged him to read slowly and keep integrating the meaning and letter groups. David needed to acquire the confidence to let go from his continual resounding and rerunning for meaning.
22.2.99 Week 18	David was encouraged to associate fluent reading with reading letter groups and whole words using a slow pace.
20.5.99 Week 28	Still being instructed that he must use letter groups and not sound letter by letter.
24.5.99 Week 29	Still emphasising using letter groups and not letter by letter sounding.
27.5.99 Week 29	David thinks programme had made a difference. He finds it very difficult to use groups of letters. Said he knew it made a difference but they were difficult to use.
14.6.99 Week 32	David was encouraged to believe he could use letter groups. He could read them in his notebook and when they were written down for him, but he was still sounding individual letters when reading text.

Table W3. David's weekly strategy running record self-efficacy and causal attribution ratings.

Progr. Wk No.	% Acc.	No Help/Help	Easy/Hard	Tried/Didn't Try	Guessed/Didn't Guess
1					
2					
3					
4	92	4	4	2	4
5	88.8	3	3	2	4
6	89.0	3	3	2	4
7	92.9				
8	96.9	3	3	2	4
9	93.1	4	3	1	5
10	93.1				
11					
12					
13	95.3	3	2	2	4
14	93.1	2	2	1	5
15	94.6	2	2	1	5
16		2	2	1	5
17	94.4				
18	97.7	4	2	1	5
19	98.5	3	2	1	5
20	90.4	2	1	1	5
21	95.9	2	2	1	5
22					5
23	91.2	2	2	1	5
24					
25	96.5	2	1	1	5
26	97.1	2	1	1	5
27	92.8	1	1	1	5
28	99.3	2	1	1	5
29	94.9	2	1	1	5
30	96.9				
31	91.5	2	1	1	5
32	92	2	2	1	5

Note: The questionnaire with the causal attribution and self-efficacy ratings is presented in Appendix E. Ratting Scale = 1 – 5. No Help (Believed required no help to read passage) = 1, Easy (The passage was easy to read) = 1, Tried = 1, Guessed = 1. Progr. Wk No. = programme week number; % Acc. = percentage accuracy for the weekly strategy running record texts. The two dotted horizontal lines denote the beginning of the strategy and self-belief interventions. The solid line denotes the beginning of 1999.